Texts and photos
Paul Virilio

BUNKER ARCHEOLOGY

Translated from the French
by George Collins

PRINCETON ARCHITECTURAL PRESS

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1994

NYU BOBST-PRESERVATION
L-294 MR 21 96

To Captain Jean Gruault

JUN 04 1998

This work was published for the first time for the exhibition:
Bunker Archeology
Paul Virilio
organized by the Center for Industrial Creation
and presented at the Museum of Decorative Arts in Paris
from December 1975 through February 1976.
The pictures were taken by Paul Virilio from 1958 to 1965.

Published in the English language by
Princeton Architectural Press
37 East 7th Street
New York, New York 10003
212.995.9620
ISBN 1-56898-015-9
©1994 Princeton Architectural Press
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Copy editing: Clare Jacobson
Special thanks to: Seonaidh Davenport, Caroline Green, Bill Monaghan,
Allison Saltzman, Ann C. Urban—Kevin C. Lippert, publisher

Printed in France
with the collaboration
of the Centre National du Livre
April 1994
Original title: Bunker archéologie
© Première édition: Centre Georges Pompidou—CCI et Paul Virilio, 1975
© Édition: 1991 Les Éditions du Demi-Cercle, Paris
Dépôt légal 4e trimestre 1991
© Nouvelle édition: 1994 Les Éditions du Demi-Cercle, Paris
Dépôt légal 1e trimestre 1994

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B2136 9122

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"The combat designated here is an originating one,
for this combat brings forth combatants as such,
not simply the assault given to a subsistent thing.
Combat is that which first of all draws up and develops the
unheard of, up to then unsaid and unthought.
The combat is then underpinned by those who strive:
poets, thinkers, statesmen. When the combat ceases,
that which is does not disappear,
but the world turns away."

M. Heidegger

PREFACE

During my youth, work on the European littoral forbade access to it; they were building a wall and I would not discover the ocean, in the Loire estuary, before the summer of '45.

The discovery of the sea is a precious experience that bears thought. Seeing the oceanic horizon is indeed anything but a secondary experience; it is in fact an event in consciousness of underestimated consequences.

I have forgotten none of the sequences of this finding in the course of a summer when recovering peace and access to the beach were one and the same event. With the barriers removed, you were henceforth free to explore the liquid continent; the occupants had returned to their native hinterland, leaving behind, along with the work site, their tools and arms. The waterfront villas were empty, everything within the casemates' firing range had been blown up, the beaches were mined, and the artificers were busy here and there rendering access to the sea.

The clearest feeling was still one of absence: the immense beach of La Baule was deserted, there were less than a dozen of us on the loop of blond sand, not a vehicle was to be seen on the streets; this had been a frontier that an army had just abandoned, and the meaning of this oceanic immensity was intertwined with this aspect of the deserted battlefield.

But let us get back to the sequences of my vision. The rail car I was on, and in which I had been imagining the sea, was moving slowly through the Brière plains. The weather was superb and the sky over the low ground was starting, minute by minute, to shine. This well-known brilliance of the atmosphere approaching the great reflector was totally new; the transparency I was so sensitive to was greater as the ocean got closer, up to that precise

moment when a line as even as a brushstroke crossed the horizon: an almost glaucous gray-green line, but one that was extending out to the limits of the horizon. Its color was disappointing, compared to the sky's luminescence, but the expanse of the oceanic horizon was truly surprising: could such a vast space be void of the slightest clutter? Here was the real surprise: in length, breadth, and depth the oceanic landscape had been wiped clean. Even the sky was divided up by clouds, but the sea seemed empty in contrast. From such a distance there was no way of determining anything like foam movement. My loss of bearings was proof that I had entered a new element; the sea had become a desert, and the August heat made that all the more evident—this was a white-hot space in which sun and ocean had become a magnifying glass scorching away every relief and contrast. Trees, pines, etched-out dark spots; the square in front of the station was at once white and void—that particular emptiness you feel in recently abandoned places. It was high noon, and luminous verticality and liquid horizontality composed a surprising climate. Advancing in the midst of houses with gaping windows, I was anxious to be done with the obstacles between myself and the Atlantic horizon; in fact I was anxious to set foot on my first beach. As I approached Ocean Boulevard, the water level began to rise between the pines and the villas; the ocean was getting larger, taking up more and more space in my angle of vision. Finally, while crossing the avenue parallel to the shore, the earth line seemed to have plunged into the undertow, leaving everything smooth, no waves and little noise. Yet another element was here before me: the hydrosphere.

When calling to mind the reasons that made the bunkers so appealing to me almost twenty years ago, I see it clearly now as a case of intuition and also as a convergence between the reality of the structure and the fact of its implantation alongside the ocean: a convergence between my awareness of spatial phenomena—the strong pull of the shores—and their being the locus of the works of the "Atlantic Wall" (*Atlantikwall*) facing the open sea, facing out into the void.

It all started—it was a discovery in the archeological sense of the term—along the beach south of Saint-Guénolé during the summer of 1958. I was leaning against a solid mass of concrete, which I had previously used as a cabana; all the usual seaside games had become a total bore; I was vacant in the middle of my vacation and my gaze extended out over the horizon of the ocean, over the perspective of sand between the rocky massifs of Saint-Guénolé and the sea wall in the port of Guilvinec to the south. There were not many people around, and scanning the horizon like that, with nothing interrupting my gaze, brought me full round to my own vantage point, to the heat and to this massive lean-to buttressing my body: this solid inclined mass of concrete, this worthless object, which up to then had

managed to martial my interest only as a vestige of the Second World War, only as an illustration for a story, the story of total war.

So I turned around for an instant to look at what my field of vision onto the sea had not offered up: the heavy gray mass where traces of planks lined up along the inclined ramp like a tiny staircase. I got up and decided to have a look around this fortification as if I had seen it for the first time, with its embrasure flush with the sand, behind the protective screen, looking out onto the Breton port, aiming today at inoffensive bathers, its rear defense with a staggered entrance and its dark interior in the blinding light of the gun's opening toward the sea.

I was most impressed by a feeling, internal and external, of being immediately crushed. The battered walls sunk into the ground gave this small blockhouse a solid base; a dune had invaded the interior space and the thick layer of sand over the wooden floor made the place ever narrower. Some clothes and bicycles had been hidden here; the object no longer made the same sense, though there was still protection here.

A complete series of cultural memories came to mind: the Egyptian mastabas, the Etruscan tombs, the Aztec structures ... as if this piece of artillery fortification could be identified as a funeral ceremony, as if the Todt Organization could manage only the organization of a religious space ...

This was nothing but a broad outline, but from now on my curiosity would be quickened; my vacation had just come to an end, and I could guess that these littoral boundary stones were to teach me much about the era, and much about myself.

On that day I decided to inspect the Breton coasts, most often on foot along the high tide line, further and further; by car as well, in order to examine distant promontories, north toward Audierne and Brest, southward to Concarneau.

My objective was solely archaeological. I would hunt these gray forms until they would transmit to me a part of their mystery, a part of the secret a few phrases could sum up: why would these extraordinary constructions, compared to the seaside villas, not be perceived or even recognized? Why this analogy between the funeral archetype and military architecture? Why this insane situation looking out over the ocean? This waiting before the infinite oceanic expanse? Until this era, fortifications had always been oriented toward a specific, staked-out objective: the defense of a passageway, a pass, steps, valleys, or ports, as in the case of the La Rochelle towers; it had always been a question of "guarding" as easy to understand as the caretaker's role. Whereas here, walking daily along kilometer after kilometer of beach, I would happen upon these concrete markers at the summit of dunes, cliffs, across beaches, open, transparent, with the sky playing between the embrasure and the entrance, as if each casemate were

an empty ark or a little temple minus the cult. It was indeed the whole littoral that had been organized around these successive bearings. You could walk day after day along the seaside and never once lose sight of these concrete altars built to face the void of the oceanic horizon.

The immensity of this project is what defies common sense; total war was revealed here in its mythic dimension. The course I had begun to run over the bank of *Festung Europa* (Fortress Europe) was going to introduce me into the reality of Occidental geometry and the function of equipment on sites, continents, and the world.

Everything was suddenly vast. The continental threshold had become a boulevard—the linearity of my exploration; sun and sand were now personal territory to which I was taking more and more a liking. This continuous band of dunes and pebbles and the sharp crest of the cliffs along the coast fit into a nameless country where the three interchanges were glimpsed: the oceanic and aerial space along with the end of emerged land. The only bearings I had for this trip from the south to the north of Europe were these steles whose meaning was still unsure. A long history was curled up here. These concrete blocks were in fact the final throw-offs of the history of frontiers, from the Roman *limes* to the Great Wall of China; the bunkers, as ultimate military surface architecture, had shipwrecked at lands' limits, at the precise moment of the sky's arrival in war; they marked off the horizontal littoral, the continental limit. History had changed course one final time before jumping into the immensity of aerial space.

My activities often led me into teeming ports, and what most surprised and intrigued me there was finding once again in the middle of courtyards and gardens my concrete shelters; their blind, low mass and rounded profile were out of tune with the urban environment. As I concentrated on these forms in the middle of apartment buildings, in courtyards, and on public squares, I felt as though a subterranean civilization had sprung up from the ground. This architecture's modernness was countered by its abandoned, decrepit appearance. These objects had been left behind, and were colorless; their gray cement relief was silent witness to a warlike climate. Like in certain works of fiction—a spacecraft parked in the middle of an avenue announcing the war of the worlds, the confrontation with inhuman species—these solid masses in the hallows of urban spaces, next to the local school house or bar, shed new light on what "contemporary" has come to mean.

Why continue to be surprised at Le Corbusier's forms of modern architecture? Why speak of "brutalism"? And, above all, why this ordinary habitat, so very ordinary over so many years?

These heavy gray masses with sad angles and no openings—excepting the air inlets and several staggered entrances—brought to light much better than many manifestos the urban and architectural redundancies of

this postwar period that had just reconstructed to a tee the destroyed cities. The antiaircraft blockhouses pointed up another life-style, a rupture in the apprehension of the real. The blue sky had once been heavy with the menace of rumbling bombers, spangled too with the deafening explosions of artillery fire. This immediate comparison between the urban habitat and the shelter, between the ordinary apartment building and the abandoned bunker in the heart of the ports through which I was travelling, was as strong as a confrontation, a collage of two dissimilar realities. The antiaircraft shelters spoke to me of men's anguish and the dwellings of the normative systems that constantly reproduce the city, the cities, the urbanistic.

The blockhouses were anthropomorphic; their figures recalled those of bodies. The residential units were but arbitrary repetitions of a model, a single, identical, orthogonal, parallelepipedal model. The casemate, so easily hidden in the hollow of the coastal countryside, was scandalous here, and its modernness was due less to the originality of its silhouette than to the extreme triviality of the surrounding architectural forms. The curved profile brought with it into the harbor's quarters a trace of the curves of dunes and nearby hills, and there, in this naturalness, was the scandal of the *bunker*.

Identifying this construction to its German occupants, as if they had in their retreat forgotten their helmets, badges, here and there along our shores ... Several bunkers still sported hostile graffiti, their concrete flanks covered with insults against "Krauts" and swastikas, and the interest I was showing in measuring and taking pictures of them sometimes had me bearing the hostile brunt ...

Many of them had been destroyed by this iconoclastic vengeance when the territory had been liberated; their basements had been filled with munitions gathered up along the way and the explosion of the solid concrete mass had overjoyed the countryside's inhabitants, as in a summary execution. Many riverains told me that these concrete landmarks frightened them and called back too many bad memories, many fantasies too, because the reality of the German occupation was elsewhere, most often in banal administrative lodgings for the Gestapo; but the blockhouses were the symbols of soldiery.

Once again there is this sign: these buildings brought upon themselves the hatred of passers-by, as they had only yesterday concentrated the fear of death of their endangered users. For those who at that time saw them, they were not yet archeological; I believe I was alone in seeing something else springing up, a new meaning for these landmarks aligned along the European littoral.

I remember a comeback I had devised to answer the curiosity of those wishing to know the reasons for my studying the Atlantic Wall. I would

ask if people still had the opportunity to study other cultures, including the culture of adversaries—if there were any Jewish Egyptologists. The answer was invariably, "Yes, but it is a question of time ... time must pass before we are able to consider anew these military monuments."

In the meantime, the bunkers were filled with litter or were shelter for less ideologically inclined vagabonds; the concrete walls were covered with ads and posters, you could see Zavatta the Clown on the iron doors and Yvette Horner smiling in the embrasure.

My vision appeared to be countered by that of my contemporaries, and the semi-religious character of the beach altars, left for children's play, was counteracted by resentment. What was the nature of this criticism? We violently rejected the bunkers as symbols rather than logically, with patience: as so many people said, "It is a question of time!" That is what you say too of the avant-garde ... What was the nature of the modernness in these historical ruins? Could war be *prospective?*

During my trips along European coasts, I grew more and more selective, picking up only traces of the defensive system. Everyday life at the seaside had disappeared. The space I was charting with surveys and measurements of different types of casemates was the space of a different historical time than that of the moment of my trip; the conflict I perceived between the summer of seaside bathing and the summer of combat would never again cease. For me the organization of space would now go hand in hand with the manifestations of time.

This actual archaeological break led me to a reconsideration of the problem of architectural archetypes: the crypt, the ark, the nave ... The problems of structural economy had become secondary and now I would investigate the Fortress Europe, which was vacant from now on, with an eye to the essence of architectural reality.

Observing the various casemates on the Atlantic beaches, the English Channel, and the North Sea, I detected a hub joining several directions. The concrete mass was a summary of its surroundings. The blockhouse was also the premonition of my own movements: on arriving from behind a dune I fell upon a cannon—it was a rendezvous—and when I started to circle the fortification to get inside and the embrasure of rear defenses became visible in the armor-plated door opening, it was as if I were a long-awaited guest ... This game created an implicit empathy between the inanimate object and visitor, but it was the empathy of mortal danger to the point that for many it was unbelievably fearsome. The meaning was less now that of a rendezvous, and more of combat: "If the war were still here, this would kill me, so this architectural object is repulsive."

A whole set of silent hypotheses sprang up during the visit. Either the bunker has no other use than protection from the wind, or it recalls its

warlike project and you identify with the enemy who must lead the assault—this simulacrum so close to children's playful warring ... after the real warring.

Besides the feeling of lurking danger, you can describe the structure concentrating on each of its parts. The armor-plated door is no doubt the most disquieting, hidden by its thick concrete framing, with its steel wicket and locking system, massive and difficult to move, set fast in rust today, protected on its flanks by small firing slits for automatic weapons.

This narrow door opens into a watertight coffer in which the air vent looks more adaptable to an oven than to a dwelling; everything here bespeaks incredible pressures, like those to which a submarine is submitted ... Several rear apertures carry cartouche inscriptions, supplying the support station number or the serial number of the work; others carry the name of the bunker, a feminine first name, Barbara, Karola ... sometimes a humorous phrase.

In the case of an element of the coastal battery, the embrasure is in fact the main opening of the structure; it is a cannon, a "mouth of fire," a splaying through which the gun will spit its projectiles, it is the hearth of the casemate, the architectonic element in which the function of the bunker is expressed.

Major differences of existing aspects remain between the blind screen of the lateral walls, the passive imperviousness in the rear sections, and the offensive opening in front; as for the top, apart from the observer's box, with the tiny staircase leading to the concrete nest, there are only the cannon's gas discharge pipes emerging from the concrete slab sunk into the earth. Deconsecrated, the work is reversed: without the cannon, the embrasure ressembles a door with ornamental reliefs, with vertical redans; the encircling of the "Todt Front" in the form of the tympanum above the rectangular opening becomes the companion piece to the porch of a religious building; through this makeshift entrance you gain access to a low, small room, round or hexagonal, covered with steel beams and having, at its center, a socle quite similar to a sacrificial altar. Trap doors open in the cement floor, through which access to the crypt is gained, where munitions were stored, just below the cannon's base.

Going further back into the rear of the fortification, you meet once again the system of staggered nearby defenses, with its small firing slits—one along the entrance axis, the other on the flanks—with low visibility, through which the immediate surroundings can be seen, in a narrow space with a low ceiling. The crushing feeling felt during the exterior circuit around the work becomes acute here. The various volumes are too narrow for normal activity, for real corporal mobility; the whole structure weighs down on the visitor's shoulders. Like a slightly undersized piece of clothing

hampers as much as it enclothes, the reinforced concrete and steel envelope is too tight under the arms and sets you in semi-paralysis fairly close to that of illness.

Slowed down in his physical activity but attentive, anxious over the catastrophic probabilities of his environment, the visitor in this perilous place is beset with a singular heaviness; in fact he is already in the grips of that cadaveric rigidity from which the shelter was designed to protect him.

MILITARY SPACE

"Attacking has been diverse according to the time of the invention of machines of ruination."

J. Errard

The military field is always a field of action, that of the duel and the battle. To the geologist's engagement with tectonic and geomorphological movements, the military specialist adds and overlaps his engagement with the potentialities for the troop's use of the site and their diverse means of communication and destruction. The geography of armies is dynamic geography and—as if the warrior's point of view were the privileged view on the world—it is helpful to point out that progress in topography has come since the sixteenth century from numerous European wars—as if progress in arms and maneuvers caused progress in territorial representation; as if the function of arms and the function of the eye were indifferently identified as one and the same. From Philipp Apian's maps in 1579, to César François Cassini de Thury's maps of 1755, to the famous ordinance survey maps of 1832 revised in 1931, to the electronic cartography of NASA's observation satellites, the same preoccupation with an ever-more complete unveiling of the world lives on in the geographical politics of armies.

The necessity of *controlling* constantly expanding territory, of scanning it in all directions (and, as of now, in three dimensions) while running up against as few obstacles as possible has constantly justified the increase in the penetration speed of means of transport and communication (such as the Chappe telegraph at Austerlitz) as well as the speed of the arsenal's projectiles: first during the cavalry era, through the geometrical organization of the shortest route—the route of the infrastructures—then, with the invention of energies of synthesis, through the increasing acceleration of all vehicles.

This passage from an era in which the construction of infrastructures was paramount to our era—in which emphasis is given solely to developing the performances of vehicles and projectiles—is far from being overestimated; this passage indeed takes on considerable interest in the study of the status of contemporary social space. Alongside the "prolonged" war of the peasants, there is from now on the "shrunken" war of the technician and the scientist.

Historically, if the *reduction* of obstacles and distances has always been the central problem of military space, we have reached today the rupture point: the distinction between vehicle and projectile has ceased. The only proof I need is the manned reconnaissance plane, the Lockheed SR 71, which "flies" at three times the speed of sound, which is the speed of a bullet ... This is an extreme example, but, since the first takeoff of a bomber during the First World War, through the introduction of airborne troops, up to the first stratospheric rocket, the projectile and the vehicle have formed a *coalescence* that cybernetics will purify by getting rid of the human factor in weapon systems (through robotization).

The economy of war, which up to now has always tended to transform the human landscape into a "defensive redoubt" through the *congruence* of fortifications, tends now to reduce arms disparities by transforming military objects into projectiles.

In fact, in the modern arsenal, everything moves faster and faster; differences between one means and another fade away. A homogenizing process is under way in the contemporary military structure, even inside the three arms specifications: ground, sea, and air is diminishing in the wake of an *aeronautical coalescence*, which clearly reduces the specificity of the land forces. But this homogenizing movement of combat techniques and instruments of warfare is coupled to one last movement. This is, with the "weapon-vehicle" *contraction* and the cybernetization of the system, the volumetric reduction of military objects: *miniaturization*.

As can be seen, military space is today undergoing a radical transformation. The "conquest of space" by military and scientific personnel is no longer, as it once was, the conquest of the human habitat but the discovery of an original continuum that has only a distant link to geographical reality. From now on, the warrior moves at once in the infinitely small space of nuclear physics and in the infinitely huge outer space. The reduction of warring objects and the exponential increase in their performances bring to the military establishment that *omniscience* and that *omnipresence* it has from the beginning wished to acquire.

Speed *confirms* everything that was initially contained in territorial reorganization, from ancient colonization to the era of the superhighway. The straight line prefigures high speed; the rectitude of the mark between two

poles, between two cities, anticipated the tracing of high-speed vehicles, automobile tire tracks, as well as the trail of jet exhaust gasses in the sky.

The construction of strategic and tactical infrastructures throughout the ages is in fact nothing but an "archaeology of the brural encounter"; from the point of impact at collision to the highway pile-up, the infrastructure set up the *duel* (the exchange of unfelicitous procedures before the "duel" of commerce). The strategic route, through its *shortcut*, expresses the first moment in a contraction of the world, which ends only with the power of the scientific instruments of modern warfare.

The concentration and congruence of fortification systems announced, from the first appearance of cannon powder, this reduction of the planetary habitat itself by high-performance projectiles (jets, rockets, satellites). As Sébastien de Vauban declared, "There are no more just judges than cannons, for they go straight to the point and cannot be corrupted" (weapons as value judgement, as *ultima ratio*).

It is time now to go further in the study of this confirmation brought about by the greater and greater acceleration of movements and of speeds, a bit like the record that is turning too slowly to give adequate fidelity to a song. We had to wait for the high speeds of contemporary vehicles in order to perceive adequately the field of the strategic geometrizing of the world and its tragic character.

In the course of history, route and rampart construction lined out the radiation of energy through the rectitude of lines, but the weakness of the driving forces, together with demographic weakness, did not yet allow this slow transformation of the world into a *carpet of trajectories* to become disquieting.

Speed has always been the advantage and the privilege of the hunter and the warrior. Racing and pursuit are the heart of all combat. There is thus a hierarchy of speeds to be found in the history of societies, for to possess the earth, to hold terrain, is also to possess the best means to scan it in order to protect and to defend it. Real-estate property is linked, directly or indirectly, to the faculty of its penetration and, just as something changes in value in being taken from one region into another, a place changes in quality according to the facility with which it can be crossed. The trajectory of an object, as well as the subject, carries an often unnoticed value, and the arrival of a new infrastructural-vehicular system always revolutionizes a society in overthrowing both its sense of material and its sense of social relationships—thus the sense of the entire social space. The superior speed of various means of communication and destruction is, in the hands of the military, the privileged means for a secret and permanent social transformation, a projectile for the destruction of the social continuum, a weapon, an *implosive*.

The scientific conquest of energies and of speed is thus but the conquest of the reduction and contraction of the world. Compared to the spectacular damage of the military arsenal's *explosives*, the damage resulting from *implosives* seems curiously hidden from view.

Today, the technological conjunction of the vehicle and the projectile concentrates both movements of reduction: with the supersonic jet with a nuclear payload, for example, the whole planet becomes a "defensive redoubt" (one has but to acknowledge here the special agreements between territorially small states allowing their equipment to function despite border proximity); as for the bomb, it disintegrates the elements where the vehicle dissolves the whole.

Vehicles and projectiles are but particles that endlessly develop *energy's area*. The conquest of the earth thus appears above all the conquest of energy's violence. In fact, the machine marshals matter's violence to give it orientation; the motor accumulates and condenses energy's violence to give it more range and duration (energy moves the vehicle). But we have here a continuum that is not of the human habitat: it is only the locus of violence, of its radiation, and the conquest of remaining energies is only the acquisition of a vaster violence (therefore of a loss, of a more restrained world).

Given the necessities of military intelligence, men have made themselves the servants of energy, that is to say, of violence. Sun-worshipping is not particularly different from the worship of energy's power on the part of modern technicians.

The various energy particles, which are at once vehicles and projectiles, thus accomplish a global disintegration, that is to say, ecological and social; this is why the acquisition of new energies during the industrial revolution only accomplished a revolution, that of violence, a fundamentally military-industrial revolution. Science and military intelligence have signed a treaty, and if in Francis Bacon's time "to know is to dominate," after Albert Einstein and the progress in nuclear physics, "to know is to destroy," since the last energy to appear only does so with weapons whereas in the past the civil instrument seemed the first beneficiary. The *energy crisis* is not a conjunctive event linked to economic supply problems, it is the sign of a rupture effectuated between human territory and the continuum of violence.

If in preindustrial eras the low speeds of various vehicles structured and geometrized the social landscape through infrastructural necessities, since the acquisition of high speeds, this structuring has evolved radically. The essential is no longer visible, except at times; the means of communication and the vehicle-projectile coalescence concentrate what is essential to the new "social" space. Since energy's area has become the locus of power, it is here, and not over there, that the critical is from now on played out. *The energy crisis develops in crisis energy*, which means the split between reality—

the materialness of the human habitat—and unreality—the immaterialness of a power that is founded only on the violence of energy and on the ever-expanding extension of its field. From now on the military establishment will defend not so much the "national" territory so much as that of energy, *the area of violence*.

The military institution is a cyclothymic animal hibernating during peacetime and awake for war. The consequences of this double tempo of the military apparatus have not been looked into, and the inherent characteristics of this "time of war" have not been pointed out clearly; this is one of the reasons for our deep misunderstanding of the military phenomenon.

What has sprung into sight in the meantime since the industrial revolution? *The reduction of the "time of war."* The energy of Occidental armies goes into total and rapid success against the adversary. With the national wars in Europe, we have lived through a more and more pronounced *shortening* of conflicts: from several years (1870, 1914, 1940) to a few days (in the Near East in 1967 and 1973) and finally down to a few hours with the latent possibilities of a *limited* nuclear conflict (as General André Beaufre declared, "After three hours of nuclear conflict we go headfirst into the unknown").

On the one hand, we sit in on more and more *extensive* wars (since the struggles over national territories of the European continent to the major world conflicts) and, on the other hand, we see more and more *intensive* assaults in regard to the development of destructive energy (since the first "metal hurricane" during the Crimean War in 1854 to the atomic deflagration in 1945).

The "technical surprise" of the First World War almost was halted due to a lack of means and munitions a year after the breakout of hostilities. Today, restrained conflicts in the Near East have from only fifteen days to three weeks autonomy—one even hears talk of military "gesticulation"—within which the adversaries necessarily fall back on the resources of their respective allies (such as the Russian and American airlifts to the belligerents on the battlefield during the Yom Kippur War).

In fact, the movement is even clearer than that. In the Occident, *the time of war is disappearing*; here is something that sheds light on the nuclear status quo. But the Occidental military establishment is not yet alone; besides that of the modern war-making apparatus, another wave of thought exists; archaic thought processes persist, those of primitive combat. As we analyze the recent evolution of armies, we leave out this duality between ancient military thought, surviving here and there, and the systematic intelligence that dominates modern-day military institutions.

The first "modern" wars are those of the Napoleonic empire. For the first time in contemporary history, masses of people and enormous means were marshalled; the whole nation was called to arms, from all over the old

continent. And yet, this huge triumphant army that upturned the policies of European states irremediably suffered a serious setback in Spain. This defeat was moreover premonitory: totalitarian mass and power were powerless in the face of the ancient method, the method of peasants' combat. All along subsequent history, and despite the exponential build-up in the destructive capacities of modern weapons, one will see, at regular periods, the repetition of this first defeat, of which the Vietnamese conflict is a recent example.

Prolonged warfare never loses its rights; Chinese tactics revolved around prolonging the time of war as opposed to the extreme shortening of that time in the Occidental apparatus. This duality, this conceptual duel, organizes the new strategic thought of technologically advanced armies; subversion analysis, the overt respect of the Occidental military intelligentsia for the theorists (from Sun Tse to Mao Tse-tung, not to mention Giap Vo Nguyen) of this combat mode, show us that, to really understand recent evolution of the military, the establishment cannot help but refer to other types of philosophy of armed intervention.

Scientific and technological developments of the means of destruction and communication and of the economy of their production cannot suffice for a clear understanding of the arrival of the army "civilization," of the appearance of a "time of total peace" after the period of total war.

Here we have the urban military establishment's rejoinder to the military thought of the farm community, "the army civilization in total peace is the answer to prolonged popular warfare," and it tends to encompass, in its pseudo-eternity, the long duration of partisan warfare. We are confronted with a double movement of competing military thoughts. In the Occidental military-industrial complex, the time of war tends to disappear. The necessities for implementing ever-more sophisticated technological means demand a long time for innovation and production. As a former air force chief of staff put it recently, "These new kinds of weapons trap us in a constraining logic: endless technological struggle in peacetime."

As for the Oriental military-rural apparatus, it tends to increase the time of war by mobilizing the population around active or passive—direct or indirect—survival objectives, natural catastrophes, accidents, and restrained conflicts seen as part and parcel of the same war—class struggle extending in the end into all dimensions of everyday life.

This overlay of these two strategic ways of thinking in today's world is not limited to geography, that is to say, to a more or less declared opposition of the Occident to the Orient. The overlay is found especially in the more fundamental opposition of the rural to the urban, between those who are territorialized and those who tend ceaselessly to *dissipate* in their conquest of elemental totality, in pure spatiality: sea, sky, and empty space.

But after this approach to the time of war, let us come back to the *military space* of peace and of war.

Occidental cyclothymic power organizes differently its space during peacetime in preparation for war. For example, barracks must be emptied as soon as war breaks out; their localization is thus linked to this setting into motion, to general mobilization.

At the beginning of a "classic" conflict the barracks are emptied in the outskirts of major cities to fill the fortifications at the outer limits of the country. But, there again, the different systems for fortifying the national perimeter are only switches in the war's movement; they serve not so much to keep the enemy from penetrating into the country as to slow down that inevitable penetration (by land, sea, or air). So as to put a danger-less end to the lethargy of the military animal, the ramparts awaken the armed forces. That is why one so often speaks of forts and blockhouses as so many alarms warning the hibernator: he needs to pass harmlessly from one continuum to another. That is difficult. This was attested to in 1940, the *lightning war* surprised sleeping beauty; since then, all of the evolution in modern arms aims at avoiding this *surprise* (with the ICBM missile, equipped with a thermonuclear warhead, waking up is a matter of a few minutes). That is when the rupture point is reached between the two times of the military apparatus. On the one hand, the constant sophistication of arms tends to eliminate any possibility that sleeping beauty sleeps—she has too many bad dreams and sleeps with an eye cocked for danger. On the other hand, the theoretical adversary refuses the dichotomy "wartime/peacetime," just as he will refute through subversion and terrorism the dichotomy "civil/military."

For archaic philosophy, it is with an eye to the necessities for survival in the face of natural and artificial risks that daily life is organized; social insecurity finds a different order than the urbanized and developed one. What was, in the far distant past, an *immediate and common* reality due to the weak and insufficient development of techniques to oppose cataclysmic and natural forces has become the mediate reality of underdeveloped societies still sensible to ordinary evils—like famines or epidemics—and to evils caused by dominant powers.

It seems as though we are headed toward an end of the distinction between the two times of the Occidental military apparatus, without there being, however, any identification with the peasants' vision. A major difference and opposition remains: for the military-industrial powers, it is *the state of peace* that will dominate, for the military-rural powers, it will be *the state of war*. The rupture that existed yesterday in the middle of the same nation, between periods of peace and of war, tomorrow will divide the world.

By the way, who invented Peace? ...

"Perhaps the country over a long period of years was going to transplant, to secrete at its borders luxurious settlements, a lazy and violent military cast, counting on civilians for their daily bread but finally exacting it from them, like the armed desert nomads demanding tribute from the educated marginals. Species of prowlers along the confines, loafers of the apocalypse free of material cares on the edge of their friendly abyss, familiar only with signs and portents, with no other intercourse than with several major catastrophic uncertainties, like in those watchtowers you see on the seashore.

J. Gracq

War is at once a summary and a museum ... its own. War is at once prospective and retrospective; fortifications aim not only to conserve power but also to conserve all combat techniques.

Here we meet the question of *hybrids*, the meaning of transgression, in an art of warfare in which the military instrument is never strictly functional and in which judgements must proceed from a succession of usages. The requirements in secrecy, dissimilation, and deception concerning the object, the course, the subject, the most diverse of opportunities to set up the defense of a continent's immensity allow us to take rough stock of the reuse of weapons and weapon systems, which had formerly been put to the test in distant conflicts: the floodings during the "beggars war" in the sixteenth century, which the Dutch practiced again in 1940 at the airlifted invasion of their territory, and which Field Marshal Erwin Rommel himself adopted in 1944 in flooding the Normandy plains; endless lines of stakes driven into the sand an the water line, which were nothing other than cavalry obstacles resurfacing; the antitank obstacles, concrete tetrahedrons or Czechoslovakian hedgehogs, installed on the eastern front at the beginning of the war and used again against the Allied landing craft; the first "amphibious" tanks ... each and every time a hybrid; the old forts in Le Havre or at Le Roule in Cherbourg, the fort in Aleth City in Saint-Malo, the Spanish Point in the Brest bottleneck, the old fortifications of the Channel Islands, which were refurbished with modern equipment ...

As for arms per se, it is really a zoo grouping together truly multifarious species: from the guns of commissioned battleships, those of the Maginot line, the recuperation of iron-plated cupolas and tank turrets transported onto the concrete bunker socles, all manner of odds and ends ranging from

artillery on rails from the First World War to that most extraordinary piece of machinery—the Mimoyecques ram cannon, capable of pressure-propelling its shell-arrows to points more than 120 kilometers away ... the first land and air robots, the missiles; but also no mean amount of indispensable combat accessories: the light projectors used for the first time in 1904 by the Russians on the Port Arthur Heights and recommissioned forty years later on the Atlantic cliffs, the very first radar units and the acoustic detectors designed during the First World War, infrared detection, the beginnings of the electronic war ...

But this indistinct handling of utensils can also be found in the field of construction, in the implementation of work sites for the second West Wall. The most diverse of populations are gathered together and put to work, like for the construction of boundary limits in the second century, and the recruitment of occupied peoples for huge earthwork projects in the twentieth. The Todt Organization unified the most diverse of social and ethnic groups, starting with German technicians—be they civil, military, or deported—and including conscripts and volunteers. On the average, there was one German worker for ten foreigners. Likewise, in setting up defense, troops from the four corners of Europe were used, and even Indians found their way into bunkers at the mouth of the Gironde River. There were several reasons for this, besides the size of the fortification. If an offensive can sometimes be the work of an aggressive minority, defense is only a reality when the masses are implicated. However impressive the ramparts may be, they owe their value to being constantly and totally manned and occupied—all the more so in the case of a hyper-structure engaged in the occupation of a continent. This was one of the weaknesses of the Third Reich, for, as Mao Tse-tung wrote in 1942, "If Hitler is obliged to resort to strategic defense, fascism is over and done with; indeed, a state like the Third Reich has from its inception founded its military and political life on the offensive. Put a stop to the offensive, and its existence ends."

In fact, strategic defense is only possible with the active and unconditional participation of the population, as the Chinese leader once again put it, "Only the people can build such fortifications, and only they can supply them."

Fritz Todt's mobilization is thus not due only to building requirements, to the construction of a defensive line of several thousand kilometers; it is also due to psychological and political necessities, to the participation on the part of occupied populations in the defensive and protective effort in the face of the Allied invasion.

At that time, in 1943–44, everyone was advised to dig a trench in his backyard, in the courtyard, to shelter his family. Photomontages of premature ruins were devised as if Paris had already been destroyed; the

disaster of total war was prefigured to lead the occupied populations to fear more than hope for their liberation after the fall of the great wall. As the historian R.G. Nobécourt points out, "The fortress had important psychological value, for it tended to unite the occupier and the occupied in the fear of being swept away; the fortress provided unity and identity where there was none." The socio-political role of the enceinte in the establishment of communal or national sentiment is too often forgotten.

With Fortress Europe, failure was inevitable, and the geographical configuration of the continent would confirm Mao's analysis. Lightning war, which allowed the Führer to rapidly acquire all the western European coasts, would later oblige him to adopt a defensive strategy. The continental Finistère was the defeat of the Nazi offensive, and the Allies did not have to fire cannons or land a single soldier; implicitly, the defeat was in the inner logic of the Nazi state.

Just before hostilities broke out, Adolf Hitler moreover announced in his essay, *The Expansion of the Third Reich*, "Germany will apply itself to a powerful concentration of its interior forces.... She will understand that our main task is the creation of a mighty land army, for our future is not on water but in Europe."

The *Blitzkrieg* victory brought Germany to envision its future on the seas or to adopt in the West a strategic defense, thus stopping the driving force of Hitler's military policy, precluding the end of the European concentration system. It is clear that the constantly repeated refusals of the dictator to visit the Atlantic Wall are significant; the bunkers on the European littoral were from the start the funerary monuments of the German dream. The conquest of the French beaches was—from 1940 onwards, after the aborted attempt at landing in England—the sign of the defeat of the Nazi regime and the sudden turn toward the eastern front; the initiative christened "Barbarossa" was but a frantic flight from the deadly character of the ocean void, a way of refusing to see the obstacle, the unknown, like a frightened horse.

Hitler declared, "The only aim of this war worth all the bloodshed could have been nothing else but the assurance instilled in German soldiers that they would obtain several hundred thousand square kilometers of land for general German colonization." But on the western front, on the open sea and the liquid plains, there are no possibilities for colonies.

Moreover, the Führer's conception of frontiers was purely historical, without geographical references to continental limits or relief. For him, people's borders were always incomplete; the division of the earth was the momentary result of combat, of a becoming that was never definitive but that on the contrary, could and must develop heedless of the elementary realities of the world.

According to Nazi doctrine, strangely enough, there is just one element: the lithosphere, the earth, blood. Despite the war in the air and under the sea, the offensive of the first space weapons, the atmosphere and the hydrosphere remain foreign to Hitlerian ideology. And the feeling of being limited to the earth translates directly into the sentiment of vital space, the *Lebensraum*.

"The forms of life on earth are innumerable and their will to conservation is unlimited, as is their aspiration to reproduce, but the space in which these vital processes take place is itself limited. This is the surface of a measurable sphere, on which a vital struggle of billions and billions of particular species is unwinding; it is this limitation of space that entails the necessity of struggle for life." With its anguish, its terror over the end, the limit, Nazi claustrophobia dominated all the aspects of the Second World War. The stratospheric missile is only one paradox among many: Hitler never believed in the conquest of the air, neither did he put credence in the conquest of the sea; this is the main cause of the German defeat. The *Luftwaffe* was never able to match Allied air strategy despite largely superior aircraft; the *Kriegsmarine* suffered setbacks in the early years of the war despite the qualities of its submarines. These are the results of a philosophy of military space, the philosophy of a warlord tied to the earth, to its surface; these are the results of an arms production policy that privileged ground forces to the detriment or air and sea efforts.

The hereditary enemy of German continental domination, both feared and respected, was the naval strength of the English.

Operation Seelöwe (Sea Lion), a landing in the British Isles that was conceived by Admiral Erich Raeder and that the Führer never attempted, was a superstitious homage to the "sea lion" that was the Home Fleet. These are the fantasies of a man fearing to advance over the sea, which gave birth to the last West Wall, the Atlantic Wall, looking out over the void, over this moving and pernicious expanse, alive with menacing presences; in front of the sea Hitler rediscovered ancient terrors: water, a place of madness, of anarchy, of monsters, and of women, too ...

What seems most significant in the defensive movement is the progressive disappearance of surface equipment, the fantastic development of alert systems, the electronic arsenal of what were already called "invisible arms."

Defense, in the course of the Second World War, switched from entrenchment to intelligence through the prodigious development of detection systems and telecommunications. In fact, while most of the means for acoustic detection had been created during the First World War with the improvement of optical telemetering, radiophony, and radar stem from the Second World War.

The possibilities of an air offensive, the problems created by the control of the aerial objective by antiaircraft defense or of a land objective by bomber squadrons, and the significant speeds of these manned ot unmanned new projectiles would once again revolutionize the military continuum. The arrival of nuclear arms was the strategic contribution essential to total war.

To visible arms systems, composed of obstacles situated on European shores, must be added the criss-crossing of electronic networks covering the western front of the continent. The Kammhuber line organized the German fighter forces with alert sectors, whose center of operations was in Arnhem and which covered Europe from Skagerak to the Mediterranean. There were radar netwotks scanning the English Channel, the North Sea, and the Atlantic from the Frisian Islands to the mouth of the Gironde; there was also the hyperbolic air cover of Fortress Europe by the Gee system of Bomber Command, which permitted combat wings of "flying fortresses" to teach their objectives, night or day, in any sort of weather conditions. This is the system that, at the beginning of 1941, issued in Operation Millennium the destruction of the city of Cologne. It was also the sophistication of this material that, in 1942, transformed pilots into robots in an already electronic war with the OBOE system permitting bombs to be dropped on one building rather than on another. And finally, in 1943, the H2S system gave out the first "radar image" indicating the very silhouette of the objective. This was the end of the invisibility of objectives for those fighter pilots who were protected from the hidden, removed environment of the objectives but also, for the same reason, handicapped in their aiming. This apparatus facilitated Operation Gomorrah, that hurricane of fire that destroyed Hamburg and that, along with Dresden, prefigured the effects of the nuclear explosion over Hiroshima.

But, on the other hand, there were also improvements in antiaircraft weapons. Vertical artillery ended up as ubiquitous as night fighters. Fortress Europe was covered until the end of the war with a network of panoramic German radar, each of which lit up a circle of 300 kilometers, transmitting by cable an electronic image of the sky to the huge antiaircraft defense batteries of the endangered population centers. Not only was artillery no longer blind, but now it could see in advance. This integral visibility piercing through each and every obstacle made the space of this new warfare transparent, while time was reduced by systems of prediction and foresight.

The new defense became not only the anticipation of the adversary's actions, but their prediction. The speed of new weapons was such that soon a calculator would have to prepare the attack and ceaselessly correct the control elements in order for the projectile-shells and the projectile-plane to become one: this apparatus was called the "Predictor." This *automation* of

pursuit brought on, after the war, the extraordinary development of data-processing and those famous "strategic calculators" that upset the conduct and politics of war.

The robot era began, as a matter of fact, not only with the small, remote-control tank named "Goliath" or with the V1 flying bomb that was nicknamed "meteor-dynamite," but especially with the mechanization of military intelligence, with the automation of the counterattack.

This was also the era of the great "command operas" in which the air and sea fleets were controlled, from fifty meters underground, in London or in Berlin, and where a whole group of hostesses looked after the pilots by radiophonics, guiding them, reassuring them during their missions, a hundred kilometers away. Authority was already exerted with a minimum of relays, and if, from his angle, the German dictator imagined he was a warlord directing his generals by telephone, it was the complete system of transmission that allowed total and immediate control of supreme authority over its executants. Power was from then on directly hooked into the actor, wherever he may have been.

The alerting system on German territory also played a major role in military psychology. As soon as the bomber squadrons crossed the coast-lines, the population was alerted and, as the plane altered its bearings, the target cities were immediately warned. Space and time shrank; the danger was experienced simultaneously by millions of listeners. What protects, then, it seems, is news, the radio; it is having time when there is no more space ... reaction time. The surprise effect had become a true fear; all surprises were in the end disquieting and fatal. This effect must first be abolished if one was to be adequately protected, confirming the analysis of the author of *Mein Kampf*, "Life is haunted and filled with the idea of protection ... "

Transparency, ubiquity, total and instantaneous knowledge—these are the ingredients for survival. Interpenetration between adversaries had begun: the ideal for one consisted in replacing the other, the enemy, in giving out orders to those he was fighting; at once infiltration, manipulation of propaganda, the Ministry of Fear, and the Brandenburg battalions, or the Skorzeny commandos passing to the enemy camp to deceive them. Espionage became a mass phenomenon. The requirements of total war demanded that each camp control the other and deceive it—the beginning of social overexposure following that of the environment and of territory. The attempt to know everything, immediately, gave you your enemy's identity, especially when the movement of this knowledge demanded not only knowledge, a science of your enemy's actions, but a prescience of his projects. The demand to put yourself, at the time of the project, everywhere and in all of the dimensions of combat, reverted the roles. There is no need

to look any further for the serious difficulties and the crises experienced during the Second World War by classical intelligence services, those agents nobody believed even when they brought forth extraordinary information.

Professionals in espionage were literally passed by agents in much faster lanes—by the proliferation of information systems, by the important development in mass denunciation, in other words, by the amateurs. Special agents no longer had a monopoly on uncovering or on treason; improvements in technological organs of perception and detection took their places here, there, and everywhere for numerous missions. This was also "psychological" warfare, which, competing with "electronic" warfare, transformed hundreds of thousands of civilians into potential indicators of suspects of all sorts: parachutists, Jews, escaped prisoners ... Intelligence and social control became the heart in the spirit of defense; the radio informed on everything, immediately, and you were thus protected from unpleasant surprises, but, in return, you had to alert the authorities by telephone of any odd occurrences taking place in your immediate surroundings. This was one of the forms of civilian combat for the citizen of the totalitarian state, for the inhabitant of Citadel Europe.

"The particular character of fortified works does not appear with as much impact when one dwells in them. This character became vivid only when I was reviewing block 14 of the customs point at Greffern, which its occupants had deserted. When I had after much effort succeeded in opening the enormous iron door and had gone down into the concrete crypt, I found myself alone with the machine guns, the ventilators, the hand grenades, and the munitions, and I held my breath. Sometimes a drop of water would fall from the ceiling or the sector telephone would ring in various ways. It was only here that I recognized the place as the seat of cyclops who were expert in metal works but who do not have the inner eye, just as sometimes in museums you can ascertain the meaning of certain works more clearly than those craftsmen who made them and who used them at length. Thus was I, as if inside a pyramid or in the depths of catacombs, faced with the genius of time that I construed as an idol, without the animated reflection of technical finesse and whose enormous power I understood perfectly. Moreover, the extremely crushed and chelonian form of these constructions recall aztec architecture, and not only superficially: what was there the sun is here the intellect and both are in contact with blood, with the powers of death."

E. Jünger

One of the essential characteristics of the bunker is that it is one of the rare modern monolithic architectures.

While most buildings are embanked in the terrain by their foundations, the casemate is devoid of any, aside from its center of gravity, which explains its possibility for limited movement when the surrounding ground undergoes the impact of projectiles. This is also the reason for our frequent discovery of certain upturned or tilted works, without serious damage. This homogeneity, this monolithic character, is useful for us in being able to reveal several factors at work in modern warfare.

Since the arming of the jet, and especially since the arrival of artillery on the scene, warfare has not only created a landscape by defensive constructions, by the organization of fronts and frontiers, but it has also competed successfully with natural forces; firearms, explosives, smoke screens, and gasses have contributed to the creation of an artificial climate, reserved to the battleground or, more precisely, to the moment of combat. This discovery itself deserves to be closely studied, for it is the origin of what we are now—though not for that long—used to calling pollution, saturation, and biological disequilibrium. The art of warfare aims at the constitution of an unhealthy, improper place for man just where he used to dwell—first by the rain of arrows and lances on the adversary, then by the catapulted impact of heavy boulders and cascades of burning material falling onto the assailants. But, apart from the arson ravaging huge forest expanses and the conquered cities, the comparison with atmospheric forces was weak until the development of the cannon, which allowed for a beginning in the saturation of space by canister shot, the firing plans of batteries and counter-batteries.

This is evidenced moreover in the arrangement of bastions and fortified places in the classical period, where the materialization in stone of potential artillery trajectories permitted the elaboration of the general form of the rampart for the fortified city. As Errard de Bar-le-Duc stated, "The art of fortification is but the art of setting up or spreading out the lines on which the foundations for the shape and circuit of a place will be built, so that from whatever side the enemy attacks, he should be frontally or laterally in sight and under attack." It was nevertheless not until the advent of rifled artillery and the First World War that there was the creation of steel-vaulted heavens, of a sky of fire by the very density of projectiles, shells, torpedoes, bombs, etc.

The advent of chemical warfare would complete this neo-atmospheric work with smoke producers and asphyxiating gas clouds.

Aviation, at once projectile and vehicle, had just invented a new type of atmospheric machine with the overflight of the warring landscape, with the first flying squadrons of bombers and fighters; in fact, aviation would extend considerably the effects of long-range artillery. It is in this context that Second World War military architecture must be considered.

The possibilities of weapons had become so great that the mineral element became a part of the fluidity of fluid; with the exception of rock, all the earth is a part of the movement of the ocean, a mutation of physical territory, in fact the first type of "disintegration" before the arrival of nuclear arms. In truth, the principle of arms has always been aimed at this deconstruction, first of man's body, of armor, then of the rampart built for his protection. Afterwards, the very conditions of the human habitat became the primary objectives of this destruction/destructuration. Scientific arms aim at the volatilization of all environmental conditions; what biological warfare accomplished for animal life, ecological warfare did for flora, and nuclear warfare, with its radiation, for the atmosphere. In these new conditions, military architecture—which up to then was simply the geometric organization of the landscape with its trenches, embankments, towers, zigzag trenches—no longer suited its purpose. The artificial climate of the new arms required that military construction correspond exclusively to artifice. The value of positioning changed; one saw a general movement underground in high contrast to the elevation of ancient walls. Between the first and the second world wars a totally buried fortification was "erected"—the Maginot line. Tightness became the key word of fortress builders; this was the era of the submarine, and the underground structure could efficiently protect you for a considerable depth from the omnipotence of the new arms. It was no longer in distance but rather in burial that the man of war found the parry to the onslaught of his adversary; retreat was now into the very thickness of the planet and no longer along its surface.

The ground and its equipment would then be offered up to nuclear dispersion; this would be the strategy of urbanism, brinkmanship, all the way up to combat in contaminated zones, which would renew the virtues of the submariner's diving suit. There is an affiliation between armor and the diving suit; the field of warfare extends to the totality of space, and natural landscape is replaced by a more original one in which everything is volatile, indeed flammable. Creating another planet perfectly inhabitable for man and not only for the soldier, that is the accomplishment of modern war: transforming the earth into a pseudo-sun, through a momentary return to a gaseous state ...

All of the above is present in the meaning of the concrete mass built to hold up under shelling and bombing, asphyxiating gasses and flamethrowers. Just as the eighteenth century bastion materialized the ballistic systems of rudimentary artillery, the bunker was built in relationship to this new climate; its restrained volume, its rounded or flattened angles, the thickness of its walls, the embrasure systems, the various types of concealment for its rare openings; its armor plating, iron doors, and air filters—all this depicts another military space, a new climactic reality.

Anachronistic in normal periods, in peacetime, the bunker appears as a survival machine, as a shipwrecked submarine on a beach. It speaks to us of other elements, of terrific atmospheric pressure, of an unusual world in which science and technology have developed the possibility of final disintegration. If the bunker can be compared to a milestone, to a stele, it is not so much for its system of inscriptions as it is for its position, its configuration of materials and accessories: periscopes, screens, filters, etc. The monolith does not aim to survive down through the centuries; the thickness of its walls translates only the probable power of impact in the instant of assault. The cohesion of the material corresponds here to the immateriality of the new war environment; in fact, matter only survives with difficulty in a world of continuous upheaval. The landscape of contemporary war is that of a hurricane projecting and dispersing, dissipating and disintegrating through fusion and fission as it goes along. With the passage from molecular arms to nuclear arms, what happened in test tubes at the microscopic level of chemical and biological reactions is happening from now on in the macroscopic universe of human territory. A world of moving particles—that is the inscription of these concrete steles.

In fact, the conditions of naval strategy spread from 1940 to all combat methods. The conquest of the third dimension by the aerial forces and the extension of the submarine offensive gave to the Second World War its "volume." What was only yesterday the privilege of sea powers became the privilege of the entire military establishment: the control of the sky completed the control of the sea's depths.

With the new possibilities of not only horizontal but vertical destruction and invasion, a metamorphosis in the game of war took place once again. The ramparts which, in preceding centuries, moved from the limits of the city to the limits of the nation-state moved once again to the limits of emergent land. The Fortress Europe is the sign of that moment in history when the surface of the world exposed itself to aggression.

The Todt Organization not only constructed the casemates of the Atlantic Wall, but also innumerable urban shelters for the civilian population; a whole society went underground to survive beneath an uninhabitable surface. A double movement started to take shape: the major industrial areas exploded, dissipated into European space in an effort to escape fragmentary destruction, a more extreme dissolution, while the civilian population, exposed to the annihilation of aerial bombings, gathered in these concrete towers that mark off urban space; these *Luftschutzraum*, with the subway, became the ultimate refuge of the city-dwellers. The world was nothing more than a marine and aerial littoral, and the Atlantic Wall could not be dissociated from this industrial and civilian defense complex: the assault on Forrress Europe came in the third dimension, the last military space.

The orientation facing the ocean, facing its void, the mythic character of this watchman's wake before the immensity of the oceanic horizon were not distinct from the anguished waiting of populations for the arrival of bomber squadrons in the darkness of the sky at night. From then on, there was no more protective expanse or distance, all territory was totally accessible, everything was immediately exposed to the gaze and to destruction. This marked the disappearance of the battleground and of peripheral combat; the Forrress Europe was three dimensional, the casemates on the beaches complemented the antiaircraft shelters of the cities, the submarine bases were but the counterparts of industry's subterranean bases.

Space was at last homogenized, absolute war had become a reality, and the monolith was its monument.

A new geography was created with the concrete shelters as its markers. From one end of Europe to the other a new synectics saw the light.

If the Nazi state wished to organize the interior colonization of European peoples, it was, above all, the power of arms that led it to a new arrangement of equipment. The necessities of territorial dispersion increased the importance of communications but also highlighted their vulnerability. Indeed, after burying factories and warehouses underground, the railroads, roads, and airports represented the last surface equipment. This fixedness of the infrastructure, its permanent arrangement of the landscape, was called into question and mobile modular structures were adopted: the motorized bridges of the engineers' battalion, airfields made of prefabricated sheets, artificial ports of the "Mulberry" type, temporary runways in rolls, etc. The

double feature—all terrain and amphibious at once—of certain combat vehicles spread to all other means of transport. The independence and autonomy of material on wheels with respect to infrastructures increased, mobility and autonomy became key words—being rooted, held down, had become too big a risk—everything had to be moveable so as to avoid destruction. At the end of the First World War, the new assault tanks were called "land battleships"; their form evoked fairly well a ship's hull. At the end of the Second World War, almost all vehicles tended to resemble means of transport by sea. This generalized ambivalence of the instruments of modern warfare was a signal of the dematerialization of the ground; the earth was no longer the good lodging, but a pernicious and random expanse belonging to the oceanic horizons that it extended. Faced with this morphological ambiguity, defense installations were extremely difficult to implement because anything could happen, from any and all directions.

The monolithic character of the bunker could not be otherwise explained. Linked to the other elements in the line of defense by its firing capability, the casemate had to be able to assure its own protection (this is the fortress theory that the Führer applied after the Allied landing).

The fortification, once an object, tended to become a "subject"; moreover, was not the tank a fortification on wheels? With its tens of tons, the tank could be identified as an iron casemate ...

The light artillery turret that pivoted on its tracks could also pivot on the concrete base of its support points: the "Tobrouk" were more often than not equipped with the turrets of disarmed tanks ...

Moreover, General Theo Habicht erected in 1944 in the north of France the prototype of a mobile bunker, the epitome of this frenzied hybridization, while at the same time German engineers were working in their arsenals on a mock-up of a giant combat tank, a real colossus the size of a building ...

The "survival machine" of reinforced concrete—similar in closeness to the submarine, similar in its mass and artillery to the tank, flown over by flying fortresses—borrowed many of its elements and its accessories from these machines. Hydrodynamics, aerodynamics—this interpenetration of elements, up to then radically differentiated, constituted the most recent confusion of the animate with the inanimate: aerostatic architecture.

If man has no need for the machine to live in his natural environment, he needs the machine to survive in a hostile one. Now, during combat, the surface of the earth became uninhabitable and the simplest of gestures became impossible.

This constraint modified the clothing—the uniform—and the habitat—the casemate. There was the advent of the helmet, the shield, the armor, and the recent shrapnel-proof vests. The clothing made of cloth designed to

protect the body from weather extremes was then coupled to supplementary thicknesses: steel mail, metallic sheets designed for protection against the impact of projectiles. There was moreover, from the advent of armor, an analogy with fortification: one would speak of the "shirt" of a rampart, meaning the hard rock covering of the slope, and of a "bastion," meaning the knight's coat of mail. The relationship between clothing and dwelling is extremely tight during wartime, and the identification of body armor with rock armor leads us to draw other analogies between French terms for forms of the territorial body and those of animal bodies: *gorge* (meaning both neck and gorge), *épaulement* (epaulet and retaining wall), *mamelon* (nipple and hillock), etc., the last examples of local soil assimilated to Mother Earth, to the chthonic powers.

Therefore there is no reason to be surprised to see words that ordinarily designate articles of clothing (*vêtement*) referring also to covering (*revêtement*), to mineral shelter. But there is more. The fortification is a special construction; one does not live there, one executes particular actions there, at a particular moment, during a conflict or in a troubled period. Just as you put on your armor for combat, or your raincoat in the rain, you go to the fort when the peacetime conditions of the environment yield to wartime weather conditions. What in the thickness of roof tiles was adequate to protect against hail, snow, or rain, and in the thickness of the wall to retain heat and protect from the wind, is now inadequate to protect against bullets, shells, or bombs. All construction conditions for a building are disrupted by the artifice of war. The establishment of citadels throughout the ages was the result, on the one hand, of an evolution in the value of positions—with respect to the state's policies—and, on the other hand, to the invention of new modes of combat. We have not sufficiently understood this warlike neo-climate; however, what is henceforth called "ecological warfare" existed from ancient times, and the invention of modern weapons only extends and amplifies a long generation of combat means.

Military intelligence not only established the basis for a new landscape—that of war—by organizing the social territory with its strategic routes and its forts, it also produced its own atmosphere. Just as there are two times, the time of peace and the time of declared war, there are two atmospheres and not just one.

If the rampart is thick, it is not to avoid landslides but to resist the shock of shelling, of mines, things absent from natural probabilities. The fortification answers to the accidental, the duel between arms and armor leaves its mark on the organization of the territory by progress in its means and methods, by the potentialities of its inventions—war is thus present in peacetime. A history unravels itself parallel to the history of civilian production; powers and energies develop ceaselessly in the constantly renewed

perspective of conflict, but this production, secret and surprising, is ignored. An infant is surprised over the alternation of day and night, his first storm, snow; then he gets used to the conditions and sequences of his familiar environment ... whereas only a few specialists know about the shock wave of nuclear arms, the fiery hurricane of phosphorous, the fog of phosgene. Those are the artifices of artificers, of an atmospheric work; just as there are artificial musical and theatrical works, an ecological spectacle will be devised to surprise the crowd by its vastness and sheer originality. This is what happens in every war, what happened in the Second World War with its aerial bombings, that sinister nocturnal enchantment. Military intelligence has perpetually struggled to rival with natural phenomena in terms of power and duration. Creating fire that lasts longer than shrubbery inflamed by the sun, impact more shattering than an avalanche of rock, an upheaval comparable to an earthquake—this is the industry of war. Natural elements become surpassable: the night must not mask objects or troop movements, neither must fog hamper the progression of soldiers; one must pierce through the screen of the vegetable kingdom with infrared rays or defoliants that renew, for the forest's mask, the effect of flares on nocturnal darkness. Anticipation and ubiquity are war's requirements, and distance or prominent obstacles must not impede intelligence or reconnaissance. On the one hand, one must see all and know all, and, on the other, must create masks and screens infinitely tighter than any nature offered—than any of those we have dissipated or surpassed. Nowhere else is there evidence of a more violent Promethean will; here is the place, I believe, to look for the origin of industrial civilization, the war machine as the archetype of the industrial machine. But the synthesis of combat clothing and habitat is coupled to the synthesis of the vehicle that "reduces" both space and time.

Here especially is where the new mode of production will be found most original; it should never be forgotten that the ancestor of the automobile, the log transporter of the military engineer Nicolas Joseph Cugnot, during its first trip from Paris to Vincennes, was hauling a cannon ...

Defensive architecture is therefore instrumental, existing less in itself than with a view to "doing" something: waiting, watching, then acting or, rather, reacting. To live in such a place is not so much to "dwell" there as it is to "take it on" for an act for which the casemate is the instrument.

These buildings are no longer just receptacles but binnacles, which is what distinguishes them from ordinary architecture and what gives them this anthropomorphic character. There is here a close relationship between the function of the arm and that of the eye.

The embrasure anticipates a relationship between the bunker and the limits of the firing range; the firing slit, like the squint of the eyelid, reduces the visual field to a strict minimum, to the target, with the aim of

protecting the inner organ—in this case the man aiming at the target—but this protection amounts to a gain in accuracy. Indeed, with the narrowing of the technological pupil, you eliminate the risks of shock that would destroy the human organ while eliminating in the same stroke the unvital sideshow of the landscape. There is synesthetics here; protection accomplishes accuracy and accuracy in turn protects.

The bunker is the fruit of these lines of force. It is spun from a network under tension with the landscape and, through the landscape, with the region in its expanse. It is an invisible and immaterial network that escapes our gaze and enables the bunker to hide from view and to avoid shocks.

Its aerostatic form also has a double effect: immerged in the terrain, having a minimum of asperities with its rounded or flattened angles, this form escapes from the impact of projectiles by diverting them, slipping them off its flanks, and from gazes, too, since lighting systems do not throw shadows on its silhouette.

Linked to the ground, to the surrounding earth, the bunker, for camouflage, tends to coalesce with the geological forms whose geometry results from the forces and exterior conditions that for centuries have modeled them. The bunker's form anticipates this erosion by suppressing all superfluous forms; the bunker is prematurely worn and smoothed to avoid all impact. It nestles in the uninterrupted expanse of the landscape and disappears from our perception, used as we are to bearings and markers.

This unusual aspect of bunker forms—absolutely different from the forms of ordinary constructions, scandalous on a snapshot—paradoxically is able to go unnoticed in a natural environment. This factor can be found in certain nautical forms, as if hydrodynamic, aerodynamic, and aerostatic profiles allowing for the flow of fluids had the same power on visuality.

Throughout this analysis, we have seen an analogy with the continuous matter of the liquid element, the situation on the littoral of the Atlantic Wall strengthening the analogy. An autonomous object, the bunker is linked to its environment by a relationship that is not only that of foreground to background but, conversely, that of background to foreground.

The autonomy of the blockhouse springs up out of a background alive with virtualities, drives, powers. The void no longer exists, everything can move, arrive, or go; the earth has lost its materialness, and space its emptiness, everything is saturated, the ordinary problems of architecture remain, but amplified. Water-tightness, for example, is no longer just a concern with the flow of water, with simple humidity, but with the fluidity of projectiles, with their impact. It is a question of tightness to compression, no longer to capillarity. The foundation no longer rests on the ground, but on its center of gravity, from whence arrives one of the first known single-block architectures.

By its implementation, concrete—liquid material—played its part in the new characteristics of these works. Concrete was used according to its principle, which is hardly surprising since the great specialists in this material—Finsterwalder and Todt, for example—participated in the works.

In brick or stone constructions, in assemblages of discontinuous elements, the balance of the buildings is a function of the summit-to-base relationship. In the construction of single-form concrete, it is the coherence of the material itself that must assume this role: the center of gravity replaces the foundation.

In concrete casting, there are no more intervals, joints—everything is compact; the uninterrupted pouring avoids to the utmost the repairs that would weaken the general cohesion of the work.

The bunker is not really founded; it floats on ground that is not a socle for its balance, but a moving and random expanse that belongs to the oceanic expanse, and extends it. It is this relative autonomy that balances the floating bunker, guaranteeing its stability in the middle of probable modifications to the surrounding terrain.

Referred to most often as the edifice of abomination, one transfers to the building what was the essence of arms. No one is shocked by the store window of the firearms dealer, and so little by the exhibits of combat vehicles, while the blockhouse concentrates the reprobation of war of a whole era. A personality expresses itself here through material, but there is a mistake concerning its content; what is put down to the warlike power of the Third Reich must be ascribed to the power of modern arms. The imposing forms of the bunkers of the Atlantic Wall are the consequence of its adversaries' arms, of the fire power of those that rescued us, of our own armies. The bunker, defensive architecture, is not the expression of a neoclassical aesthetic, as is the official architecture of the Nazi regime. It issues from a different history, the history of arms and entrenchment. Without going back to the last century's casemates, you have only to be familiar with English, French, or German defenses of the First World War to find many of the solutions used on the Maginot line as well as in the West Wall.

What gives "meaning" to these landmarks of contemporary military space is the firepower of all of modern armies, is the novelty of the risk factor, the new ballistics of a war in three dimensions, the war of imminent danger, everywhere at once. To see only the arrogance and violence of the enemy would be to abuse ourselves about ourselves. The bunker marks off a military space—that of the last war game, a game that all nations elaborated and perfected together in the course of the last century. The bunker of the Atlantic Wall alerts us less of yesterday's adversary than of today's and tomorrow's war: total war, risk everywhere, instantaneity of danger, the great mix of the military and the civilian, the homogenization of conflict.

Contemplating the half-buried mass of a bunker, with its clogged ventilators and the narrow slit for the observer, is like contemplating a mirror, the reflection of our own power over death, the power of our mode of destruction, of the industry of war. The function of this very special structure is to assure survival, to be a shelter for man in a critical period, the place where he buries himself to subsist. If it thus belongs to the crypt that prefigures the resurrection, the bunker belongs too to the ark that saves, to the vehicle that puts one out of danger by crossing over mortal hazards. Literally, casemate means "strong house," reinforced house; it is always a case of habitat, or rather of a kind of clothing, of collective armor in the final analysis. When we show interest in ancient armor, the ornaments and figures indicate clearly the origin and the style—Italian, French, etc.—but here hardly anything survives of this form of identification, the omnipotence of arms volatilized what was left of aesthetic will. If a few details still allow French fortifications to be distinguished from German ones, this concerns only problems of implementation, of the influence of different types of plans, in one country as opposed to another for a short time yet. With the bunker, the diversity of fortifications fades away; with it, the essence of surface entrenchment systems will disappear.

A history draws to a close and the concrete landmark indicates the place where the long organization of territorial infrastructures comes to an end, from the steps of the empire, to the borders of the state, to the continental threshold. The bunker has become a myth, present and absent at the same time: present as an object of disgust instead of a transparent and open civilian architecture, absent insofar as the essence of the new fortress is elsewhere, underfoot, invisible from here on in.

The blockhouse is still familiar, it coexists, it comes from the era that put an end to the strategic notion of "forward" and "rear" (vanguard and rearguard) and began the new one of "above" and "below," in which burial would be accomplished definitively, and the earth nothing more than an immense glacis exposed to nuclear fire. The poetry of the bunker is in its still being a shield for its users, in the end as outdated as an infant's rebuilt armor, an empty shell, an emotionally moving phantom of an old-fashioned duel in which the adversaries could still look each other in the eye through the narrow slits of their helmets. The bunker is the protohistory of an age in which the power of a single weapon is so great that no distance can protect you from it any longer.

Abandoned on the sand of the littoral like the skin of a species that has disappeared, the bunker is the last theatrical gesture in the end game of Occidental military history. The ancient ramparts, the ditches surrounding cities, were a means to reorganize a landscape. You still stroll there on Sundays, and raise vegetables close to the moats, and plant flowers on the

platforms of the batteries; this was a geometrization on the scale of an urban perimeter, while the blockhouse is scaled onto much larger expanses. Contemporary defense has sowed its equipment, a little like the objects one loses during a trip; the fortress is nothing more than a long series of support stations composed of numerous casemates, each one resembling an ambiguous instrument: a pseudo-tank made of concrete, the giant helmet of artillery observation posts, the zoomorphic forms of command centers with their frontal dome and their lateral epaulets ... An odd mixture, the fortification has become a combination of different species: mineral and animal come together in a strange fashion, as if the last fortress symbolized all of the armor types of the carapace, from the turtle to the tank, as if the surface bastion, before disappearing, exposed one last time its means and its methods in the domain of the animate as well as the inanimate.

The Atlantic Wall is in fact a "military conservatory" installed on the European coast; all resources, from the ancient port fortifications and archaic arms, find a place there, but the genres are mixed and the points of view blurred. The dummy work is countless in this continental citadel: false batteries, wooden weapons, various camouflages. Myth conflates with propaganda; the rampart is also ideological, serving both to reassure the population and to disarm the adversary with a sense of the invincible, the impregnable.

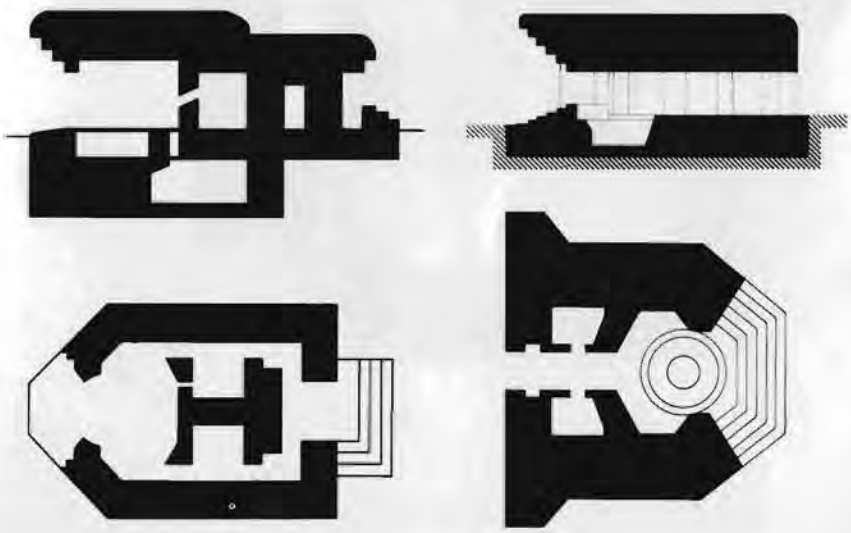
The last citadel is a theater where wars past and present concentrate themselves, from the dagger, to the bow's silent attack on sentries, to the stratospheric missile, from the lure of the swamp-hunter to the infrared detector; every kind of strategy is put to use, from the trap doors of the ancient Roman legions to the most scientific of land mines, from the antitank ditches to the "cairns" of uprighted stones in the fields to impede the parachuters. The intense propaganda around the construction of the Second World War's fortifications (the Maginot line as well as the Atlantic Wall) reveals their theatrics, their necessarily spectacular side. Indeed, if it was formally useless to inform the populations of "fortified cities" about the solidity of the fortifications, the new defense systems—by their very dimensions—required effort in this domain.

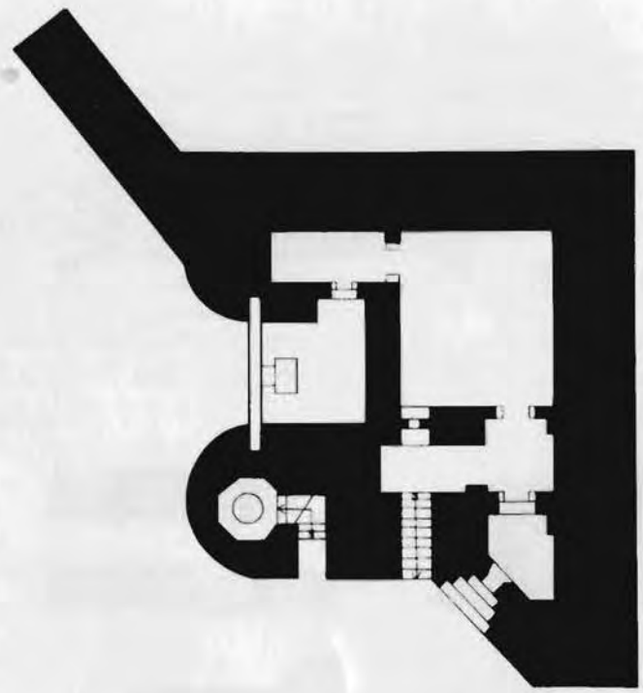
For "fortified nations," information is essential, the guarantee of the force of resistance, proof to the citizen that his territorial limits will remain impermeable. The surprise of war in the air partially annulled this sentiment of security, the destruction of the great European cities completely broke down the shielding effect of littoral and frontier fortifications; summer vacation pleasures could start up again on the beaches, at the continent's limits, the rendezvous and the popular festivities on the fortifications, on the periphery of the ancient fortified places.

TYPOLOGY OF THE FORTIFICATIONS OF THE ATLANTIC WALL

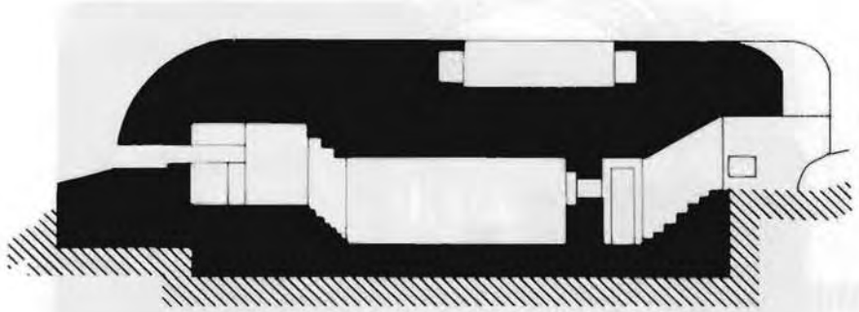
—Firing units with crenelated battlements:
machine guns, 75–155mm cannons, antitank guns, and howitzers.
—Firing units under armored cupolas:
machine guns
mine throwers
grenade throwers
light howitzers.
—Infantry observation units or artillery units under armored cupolas.
command post for coastal battery firing.

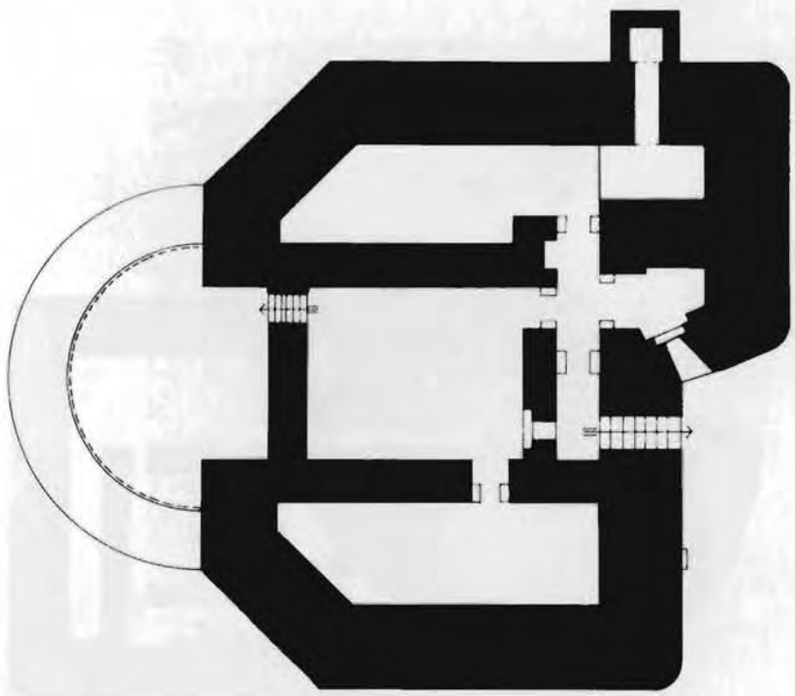
—Air defense units:
20–120mm antiaircraft guns
training rack
shelters: radio, radar, radiolocation
gunnery control stations.
—Precautionary units:
troops, munitions,
transmission centers, cannons, tanks,
command posts, dressing stations,
power plants, transformers,
water supply stations, kitchens.



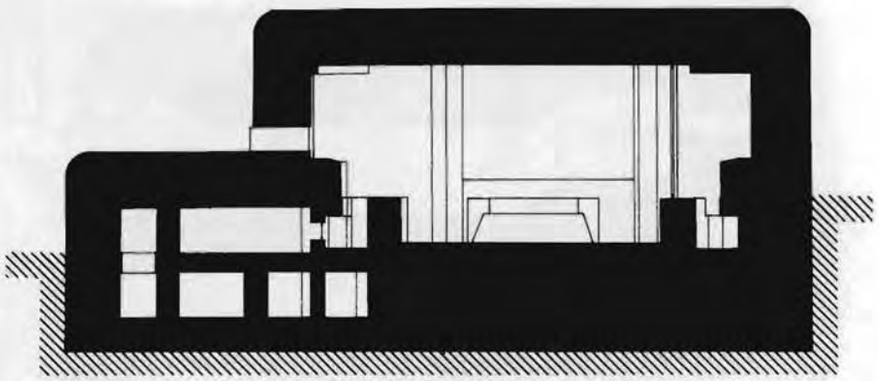


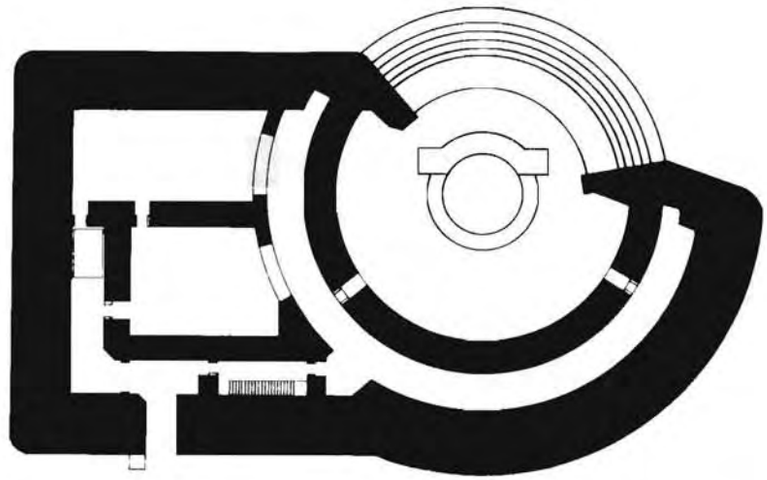
BUNKER FOR MACHINE GUN (PLAN)

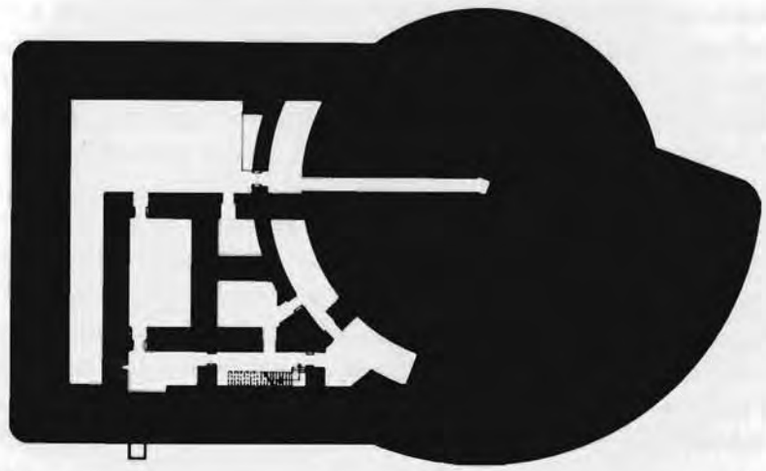




OBSERVATION POST WITH CONTAINER (SECTION AND PLAN)







BUNKER FOR LONG-RANGE ARTILLERY DEDICATED TO FRITZ TODT
(SECTION AND PLANS)

ALBERT SPEER

"Military force is regulated on its relationship to semblance."

Sun Tse

Preserved, reserved, for twenty years—just the opposite of the pursued and executed Adolf Eichmann—Albert Speer arrived in his 1969 memoirs to bear witness to the intimacy of the Third Reich.

We possess with his memoirs a priceless document: the act of contrition of a war criminal. However, faced with the positive reception of the critics, a warning is necessary: this spectacular repentance must not mask the trajectory of the personage, nor hide the political parable of his career.

This two-fold piece of writing, in which everything is rectified and verified with respect to the contemporary situation, constitutes precise evidence of that German two-facedness denounced by Friedrich Nietzsche in his own *ecce homo* and which served as the groundwork in the advent of nazism. A phenomenon of adaptability, the architect Albert Speer brings us, thanks to this double understanding, priceless revelations of the cultural roots of the Nazi regime. His rise was ironically accomplished by deaths—that of Paul Ludwig Troost, Hitler's architect, in 1934, and that of Fritz Todt, engineer and arms chief, in 1942. His expiation at the Nuremberg War Trial in 1945 allowed Speer, who for an extended period was second in command in the Third Reich, to again rise up and become famous.

The Doctor Jekylls were not necessarily physiologists, when Speer the architect explained for us that, for his Mister Hyde, "his consciousness of having a political mission and his passion for architecture were one and the same." It just so happens that this explanation suited Speer as much as it did Hitler, the passion for architecture simply preceding his passion for politics.

Indeed, the abrupt rise of the general inspector of construction to the supreme headquarters of wartime economy in 1942 unleashed Speer's ambition for succession. Efficiency became the key word for the architect/

minister. He would devote all his energies to increase, with the productivity of his office of planning, the importance and indispensability of his position and, through it, of his person.

This will to power, which he exhibited first in the erection of monuments, he later exerted all over Europe, with the organization of the *Lebensraum*. The interior decorator of the 60 square meters of the Führer's first office, the architect of the chancellery in which this office would grow to epic proportions (960 square meters!), the Berlin town planner envisioning to build a dome 250 meters high, and imagining for Nuremberg a nocturnal temple from which the clouds would be lit by hundreds of projectors to give the illusion of a pillared room with a ceiling 6000 meters high, that man would work at the scale of a continent and would become, before Joseph Goebbels, the veritable promoter of total war.

But before analyzing the nature of this continuum, let us look back: born into a bourgeois family, refused entrance to the famous Poelzig Studio on account of a "lack of imagination," Speer became a member of the Nazi party in 1931, and prepared his thesis on "the architecture of the Germans" with a historian. This deflected gaze, this constant recollection, marked his career. He became the reproducer, not only of past styles, but, above all, of the administrative and structural German bourgeoisie, which was the underpinning of the regime. He organized and protected this bourgeoisie when he became director of industry. German capitalism and, in particular, the opportunity of identical reconstruction in the immediate postwar period, that opportunity so vehemently decried by Alexander Mitscherlich owed him much.

In 1938, this conservative conceptualized his lack of imagination in a "theory of the value of ruins." According to Speer, "the structures built with modern techniques" would not be appropriate to bequest to future generations, "this bridge of tradition" demanded by Hitler. It was unthinkable that this pile of rusted rubble could one day inspire heroic thoughts, just as the monuments of the past were able to do.

"My theory was designed to solve this dilemma. I wanted to give up using the modern materials found in metallic and concrete constructions. By respecting certain laws of statics, buildings could be constructed that, after thousands of years, would closely resemble Roman models." The monuments designed according to this "law of ruins" were inspired by Caracalla's public baths, the altar at Pergamos, Athens's stadium, the domes of Etienne-Louis Boullée, etc. And this shoddy bazaar would survive in the cadaveric rigidity of its elements.

The thousand-year Reich had found its architecture, but it was of centuries past. This was above all a "new deal" for the bourgeois aesthetic, especially after the cultural devaluation of the twenties.

The same tautological phenomenon happened simultaneously in fascist Italy and in Stalinian Russia, where revolutionary architects disappeared, leaving in their wake repeaters of the past. The "bridge of tradition" spanned political systems, uniting oppositions by a pathological adherence that already implied the amplitude of the future conflict.

In 1940, at the beginning of hostilities, Speer succeeded in convincing Hitler to leave responsibility for construction and arms in the hands of a single person: Fritz Todt. This collusion of the target and the projectile, this confusion of the weapon and the objective (which is also a part of the process of adherence) highlights the absolute character of the conflict. After the accidental death of Todt in 1942, the concentration of power in the hands of his successor, Albert Speer, accelerated at the same speed as that of the expansion of the Third Reich.

For this architect promoted to minister, the central office of planning became the most important institution in the war economy. From the hypertrophy of monuments, Speer passed brutally over to the imagination of Fortress Europe. The lightning war had expanded vital space to the outer limits of the continent; the war in the sky had given to the parachuted invasion and the destruction of Rotterdam a third dimension to the conflict. The sky had volatilized, everything had become a field of action, little was missing before war became total. Speer, with Goebbels, would set out to see it through.

In the meantime, north of Norway all the way to the south of France, he had the Todt Organization construct countless bunkers, symbols of the fragility of the Nazi state. This cryptic architecture became the marker for the evolution of Hitlerian space.

These concrete shelters ceaselessly proliferated and got thicker, an almost botanical sign of a constantly increasing pressure, of a constantly more "rigorous" climate. In the end these bunkers obtained the role of the prestige monuments, witnessing not so much the power of the Third Reich as its obsession with disappearance.

On the other end of the Atlantic Wall, the minister/city-planner played a part in the *Ostkolonisation* by having each German city construct a colonial city in the occupied territories of Poland and the Soviet Union. One year later, he objected to Hitler's will to avoid taking prisoners on the Russian front: to exterminate men is to waste a work force, and lose manpower; it is more profitable to have them die working in the camps or the tunnels of the *Mittelwerke*. Speer then prepared with Fritz Sauckel the deportation of the millions of men whom his gigantic project required.

But this was still insufficient; he had to radicalize Germany's mobilization itself. The destruction of the first German towns by Allied air raids gave him the idea he needed: when everything was destroyed, in the

greatest dearth, the institutions continued to function; a social system survived, there was no revolt, no contestation on the part of the victims.

The proof was flagrant: total war was possible.

Speer suggested to Hitler severe cuts in the German standard of living, a drastic crack down on work conditions that Hitler refused. Stepping outside of his ministerial functions, he then proposed a new military strategy: to surpass classical warfare to reach a type of ecological warfare that would destroy not so much arms and armies as the indispensable resources for the enemy's survival. Once again Hitler refused and Speer was indignant. "The hesitations of Hitler," he wrote, "were an obstacle on my path to the promotion of an economy of total war." The lightning war was the expression of the expansionist theories of the Führer, the *Lebensraum* was nothing else but the old colonial imperialism applied to Europe. Hitler, nevertheless, always refused what he called the "interior colonization" of Germany; he wished to organize the national territory into a anthropological and natural reserve, and it was precisely these "ideal" conditions of his plans for Germany that Speer's state of total war called into question.

The 18th of February 1943 is a historic date, the date of the discourse officially named "Concerning Total War." Speer and Goebbels, closely associated in its elaboration, decided to push aside the resistance of important figures of the party, like the Führer, to the radicalization of the situation.

To begin with, Goebbels questioned German society, represented by the participants in the meeting at the Sports Palace in Berlin, "Are you ready to work ten, twelve, even fourteen or sixteen hours a day should the Führer order it?" Before hearing the enthusiasm, he continued, "The English pretend that the German people prefer capitulation to total war; now I ask you, do you want total war? Do you want it even more total, more radical than can be imagined today?" After the tragic approbation, the field is free and the *Gauleiter* concluded, "Then, people, let the storm break out!"

As destruction became a form of production, war expanded, not only to the limits of space but to all of reality. The conflict had become limitless and therefore endless. It would not come to an end, and, in 1945, the atomic situation would perpetuate it: the state had become suicidal.

For the minister of "wartime production and construction," the collision between the weapon and the building had taken place, the "law of ruins" had taken on new meaning, the constructor had become the destructor, the architect in power had become the architect of power.

The high-water mark of his career was reached: Albert Speer was already the figure of the heir apparent; he conceded to Xavier Dorsch, director of the Todt Organization, the direction of construction, while prudently keeping the responsibility for town planning.

Actually, 1943 was a crucial year because numerous moral resistances were abolished in all factions. The Allied air fleet put into practice a new tactic of destruction: zone bombing with a view to destroying not precise objectives but whole regions. Air Chief Marshal Arthur Harris, head of the Bomber Command, had experimented with this "zoning of destruction" before the war on revolting tribes in India, Mesopotamia, and Transjordan (the importation of colonial methods was not only practiced by the Nazi regime). After the Casablanca Conference, Harris declared, "The moral question was left aside and I was in charge of assuring the general disorganization of German industry. This afforded me a wide margin of maneuver and I could attack as I saw fit all the German cities with populations of at least 100,000 inhabitants."

The ruin of factories did not constitute a thorough objective; Winston Churchill and Harris decided to attack civilian morale.

The "fan" spread out over Germany was composed of a thousand bombers saturating its aerial space. After Operation Gomorrah, which in a hurricane of fire destroyed Hamburg, it was the bombing of the Ruhr that Speer appraised: the ecological warfare that had been refused him was beginning to be practiced by the Allies. He was far from imagining to what extent they would take it, for the future head of the first atomic bombing, General Curtis LeMay, was already getting practice in the German sky.

Attacked on three fronts, the Oriental, the Occidental, and the aerial, Nazi vital space regressed and hardened: regression with respect to expansion, hardness with respect to thickness.

Speer buried his factories and gave them concrete shells. The bunkers reached monstrous proportions, the tanks fantastic weights.

In 1944 the assassination attempt on Hitler failed. Unwittingly involved in the event, his name having been mentioned by one of the conspirators, Speer became suspect. That was the end of his promotions, and the post of vice-dictator that he had proposed was out of his reach. Hitler named his assistant Goebbels—who played a major role in the failure of the plot—"Total War Commissary to the Reich." Now Speer was disgraced; he feared the worst fate and for a moment played with a plan to asphyxiate in a chancellery bunker Hitler, Goebbels, and Martin Bormann, his direct rivals. He had close ties at this time with one of the directors of the Siemens firm (it was after a meeting with him that Speer envisioned the removal of the Führer).

At last, he took stock of the situation and did not delay, once again, to adapt to his new situation: since he could no longer aspire to the supreme promotion, he would carefully prepare the postwar climate and rely on his industrial captains in the protection of German capitalism. Industrial decentralization gave him his first opportunity. The enterprise of maneuvers

automatically fell under the control of the state; they had no alternative other than destruction under bombs or state control. Speer established himself the advocate of private enterprise and opposed the nationalization of German industry. This man who up to then had never hesitated to reinforce centralization and planning according to his own aims now whispered that once the war was over economic freedom would be restored to German capitalists. In fact, he payed in advance with what little credit he still had.

The German upper class, anticipating the fall of the Reich, saw in Speer an influential enough person to help it out of its crisis.

For their part the Occidental countries showed great respect for Speer's technocratic efficiency, and the former protégé of the Führer started to be revived with the possibility of a "national destiny" after Germany's defeat. So would he abandon, after their construction, the production of armaments to one of his collaborators in order to devote himself entirely to the problems of the passage to "a postwar industry."

From this perspective, he opposed the scorched-earth policy. The promoter of ecological warfare had become the protector of industrial substance, as he stated, "without ideological or national prejudice"; and this statement would save his life at Nuremberg.

But Germany was in agony, and, as Speer put it, "the chaos of directives limits the chaos on the terrain." This did not keep him, however, from using one of the remaining radio transmitters to call for insurrection and, in so doing, put himself in the people's service.

The last act: the surrender of Hitler's Germany was unconditional and without political intermediaries, without representation. On 8 May 1945 in Berlin, the state suppressed the state. For the first time, a surrender abolished not only the state of war, but the political power of the vanquished country. Power suppressing power, there was an innovation Speer never envisaged ... but he was so lacking in imagination!

What was most instructive in this period immediately following the end of hostilities was the obscene curiosity of the Americans concerning the effect of strategic bombings, and the understanding that developed between the members of the Economic Warfare inquest and the criminals of total war; it was a little like the collapsed cities became laboratories, as if the survival of a social order in the utmost destitution, beyond the usual constraints, constituted a priceless research field for these distinguished "entomologists."

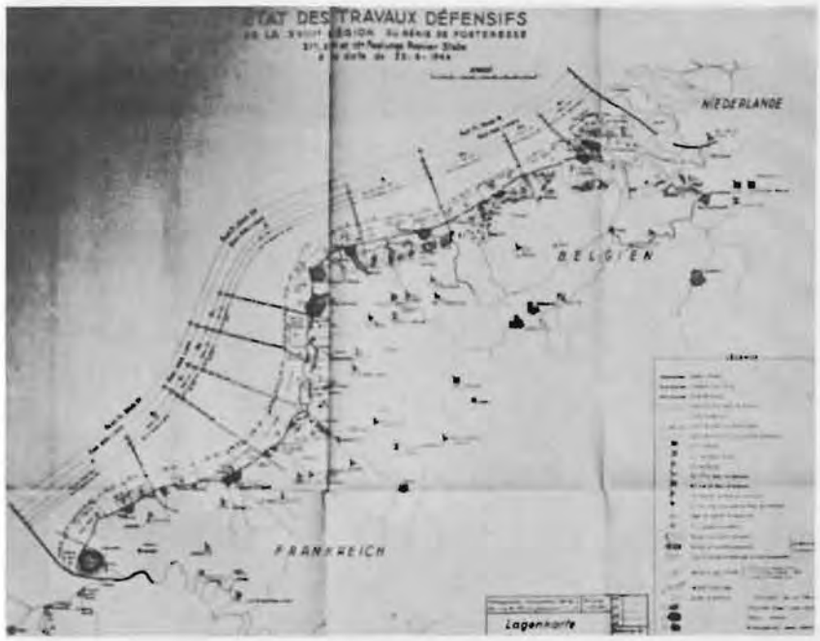
The Nuremberg Trial was used by Speer as a tribunal to prove that he was only an instrument, certainly guilty, but that technological advances, in particular in the field of communications, had issued in the catastrophe. In his final discourse, he declared, "Hitler's dictatorship was the first of an industrial state, a dictatorship that, to dominate its own people, used to

perfection all technical means at its disposal ... thus the criminal events of these past years were not due only to the personality of Hitler. The excessiveness of these crimes could at the same time be explained by the fact that Hitler was the first who knew how to commit them thanks to the means offered him by technology."

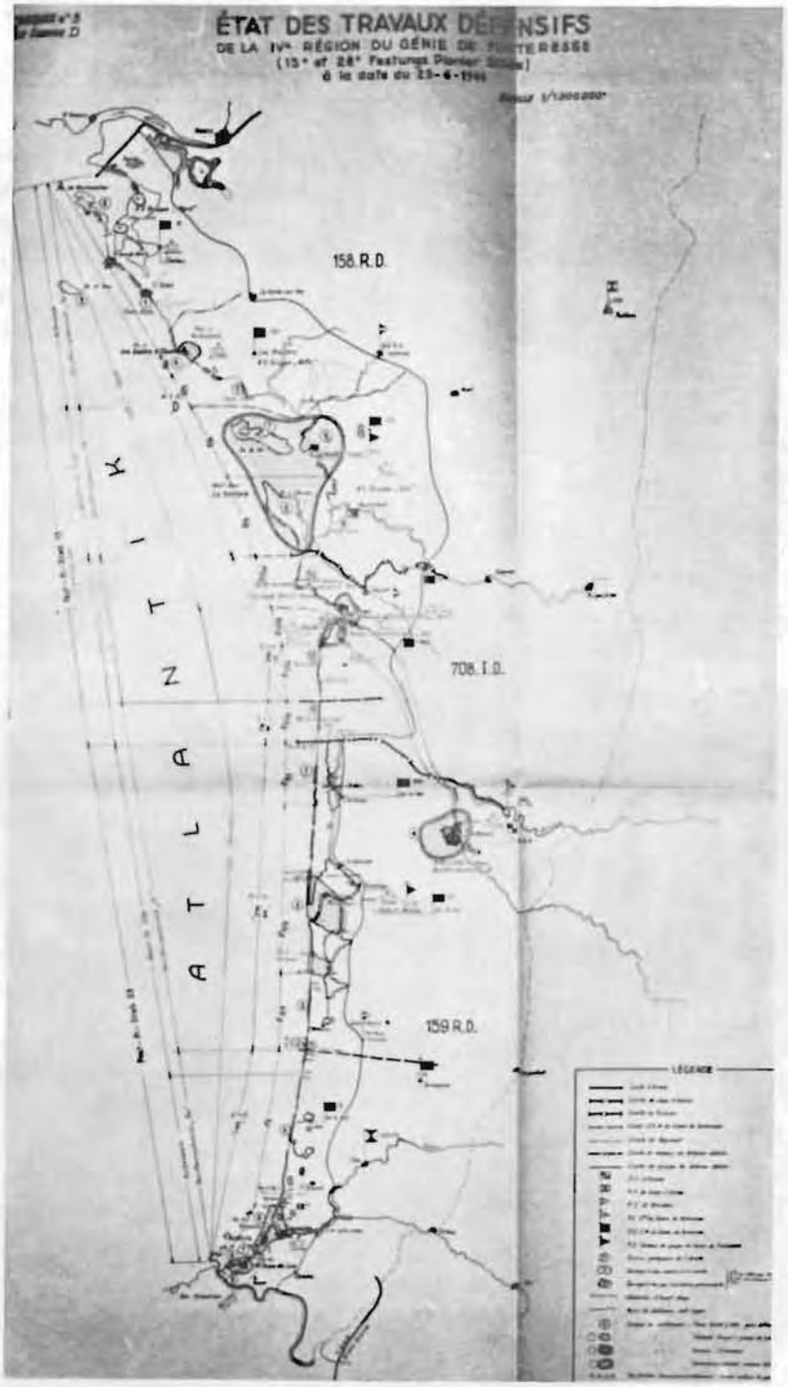
CARTOGRAPHY

According to Admiral Jean Lemonnier, who in 1944 established a complete list and the plans of fortifications and obstacles built by the Germans on French shores, the "Atlantic Wall" comprised 15000 concrete works of which 4000 were major works and 9300 artillery batteries. Each system of coastal defense, support station, or naval battery was buttressed to a major port, itself transformed into a fortress.

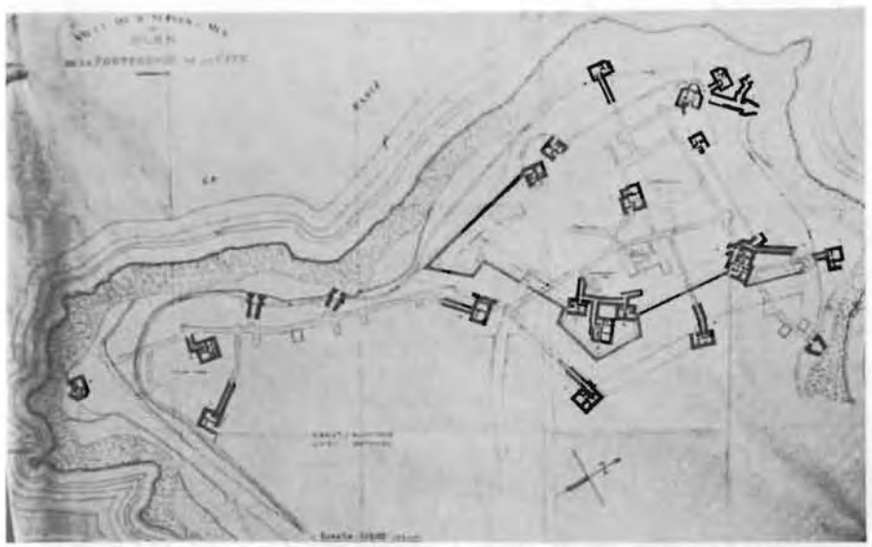
STATE OF PROGRESS OF WORK
ON THE ATLANTIC WALL ON 25 JUNE 1944



NORMANDY IS NO LONGER DEPICTED ON THESE PLANS
DRAWN UP TWENTY DAYS AFTER THE ALLIED LANDING



STATE OF WORK BEING DONE ON THE ATLANTIC WALL



STATE OF WORK ON THE MEDITERRANEAN LITTORAL
FIFTY DAYS BEFORE THE ALLIED LANDING IN PROVENCE

FORT AT THE CITY OF ALETH, ONE OF THE MOST IMPORTANT
SUBTERRANEAN WORKS OF THE ATLANTIC WALL

1929

Mein Kampf published.

1930

Construction of the Maginot line.

1933

January 30 Hitler becomes chancellor of the Reich.
March 23 Hitler receives full powers for four years.
October 19 Germany leaves the League of Nations and decides to rearm.

1934

May 27 First attempt at annexation of Austria with the assassination of Engelbert Dollfuss.
August 2 On Paul von Hindenburg's death, Hitler combines the functions of chancellor and Reich president.

1935

January The Saar is attached to Germany by referendum.

1936

June 7 Remilitarization of the Rhineland and the beginning of the construction of the Siegfried line, the West Wall.

1938

March Annexation of Austria.
September 29 Munich: annexation of the Sudeten Germans.
December Fritz Todt is in charge of all military constructions; creation of the Todt Organization.

1939

March 15 Annexation of the rest of Czechoslovakia.
May 28 Signature of the Pact of Steel between Hitler and Mussolini.
August 23 German-Soviet mutual nonaggression pact.
September 1 Attack on Poland.
September 3 France and Great Britain declare war on Germany.
September 27 Annexation of Poland.
December Installation on English coasts of the Chain-Home radar system.

1940

April Annexation of Denmark.
Mai 10 The opening of the French front.
June Annexation of Norway.
June 22 Armistice between France and the Reich. The Germans occupy, with the north of France, a coastal band from the Loire to the Pyrenees. The Reich is then in possession, with the west coast of Europe (from Norway to Spain), of the opening onto the Atlantic its navy needs. It is on this much-desired littoral that the Atlantic Wall will have to be erected in the future.
July Occupation of the Channel Islands. Installation of the first German radar in the Straight of Dover.
July 16 War Directive 16 (see appendix). Preparation for Operation Sea Lion. The *Blitzkrieg* is unable to completely destroy the British army, which is able to embark at Dunkirk without being pursued and which remains a fearsome force. The Führer, like Caesar and Napoleon, tries to invade Great Britain to assure his victory on the European continent. Like his predecessors, he chooses the Straight of Dover for the installation of his first bases. This "river-crossing" as he calls it, will be possible under two conditions: if control of the sky over England is assured, and if the Royal Navy is kept from intervening during the assault landing.
August–September Air Force Marshal Hermann Goering must therefore destroy the Royal Air Force, from the ground, if possible. Despite a few initial successes, due to the systematic bombing of runways, this is a failure. The Germans prefer to resume terror bombings of cities rather than to persevere in the destruction of the aerial infrastructure of the English. This will be, with the implementation of the English radar system, the main cause of the first German defeat in what has been called the Battle of Britain.
To try to prevent the intervention of the Royal Navy during the river crossing, Hitler—who has no hope of success in opposing them with his few large units in naval combat—decides to install at Cape Gris-Nez long-range batteries on rails, which will bomb the English coasts and forbid British battleships from combat in an effort to curtail the German landing.

This project is a sign of the inability of the German warlord to make judgements in terms of naval combat. All of the weaknesses of the Atlantic Wall are here already summed up.
If the French have underestimated the power and the mobility of tanks in constructing the Maginot line, the Germans in turn, from the outbreak of hostilities, were disillusioned about the possibilities of coastal fortifications before naval power, or rather aeronautical power.
These huge cannons on rails are protected by concrete tunnels; that is how, with Operation Sea Lion, the first bunkers appear in what would become the Atlantic Wall. Hitler entrusts to Fritz Todt, chief of construction in the occupied territories, a project for installing naval artillery from his arsenal in casemates (in a plan for four years): thus the Lindemann batteries, the Siegfried line (later dedicated to Todt), the Friedrich August and Grosser Kurfürst batteries ...
September 27 Tripartite pact between Germany, Italy, and Japan.
October After failure in the Battle of Britain, the Germans now try a war of attrition. The *Luftwaffe* intensifies its bombings of London and other major English cities, the submarines of the *Kriegsmarine*, attacking convoys, try to establish a blockade of the British Isles and sink an impressive number of merchant ships. But succeeding in this blockade means controlling the seas; the U-boats alone are unable to assume such a role, and in the end the English fleet succeeds in protecting its convoys.
Since submarines are vulnerable during refueling on the open sea and at departure on missions, the Germans decide to construct submarine shelters. In Brest, Lorient, Saint-Nazaire, La Palisse, and Bordeaux, the largest concrete structures of the whole Atlantic coast will be built. These monuments will pick up the characteristics of the first submarine bases of the First World War (at Helgoland and Bruges) with roofing reinforced by anti-aircraft defense mechanisms.

1941

January Fritz Todt becomes *General Inspektor für Wasser und Energie*. The Todt Organization (T.O.), which is already a paramilitary organization, becomes totally independent of the army, possessing its own uniform and police, with allegiance to the Führer alone. The T.O. directs all European work sites with the slightest strategic interest: industrial and urban protection, communication networks, hydroelectric power, and various fortifications. Through its regional agencies, and with the help of private enterprise, it composes an authentic technostructure, in charge of the organization of Fortress Europe and employing millions of workers: volunteers, obligatory work forces, prisoners, and deported persons.

May Operation Sea Lion is abandoned and the bunkers prefiguring the Atlantic Wall—the batteries of Cape Gris-Nez and the submarine bases—are but the vestiges of this aborted offensive. Only the Channel Islands, initially organized as defensive redoubts, already appear as the maquettes of the future European citadel.

June 21 Hitler attacks the USSR; Operation Barbarossa; the reversal of fronts, from west to east. The Germans come to a stop on the littoral in order to lead an offensive in the great plains of the east so as to implement the *Ostkolonisation*, an assault so very much more German (Teutonic) than naval. This campaign, which Hitlerian Germany wanted to complete in six weeks, necessitated opening up the grain silos of the Ukraine, the oil wells in Caucasus (essential to a war of movement), the Middle East, Asia ...

July 19 War Directive 33, devoted mainly to the eastern front, nevertheless plans for the first time a defense organization of the western coasts, in particular those of Norway and the Channel Islands. At this time, the offensive batteries of Cape Gris-Nez are not yet finished, but can fire. Hitler decides to construct similar batteries on the Channel Islands, so to forbid navigation in the English Channel by engaging British surface units (the Mirus battery, for example) in combat.

December 6 On the Russian front, the "lightning campaign" is stopped, first by the adversary, than by "general winter," and the front stabilizes in November. Georgii K. Zhukov has counterattacked and saved Moscow.

December 7 The Japanese attack Pearl Harbor, and this assault, which had not been planned in the Tripartite Pact of 1940, moves the United States out of its isolationism.

December 11 Even though the tripartite treaty does not oblige him to, Hitler declares war on the United States. As he underestimated Russian resources, so will he underestimate American industrial power.

December 14 Hitler speaks for the first time of an Atlantic Wall, an impassible (so he would have it) rampart to protect Fortress Europe from any invasion from the west. Indeed, if England could not alone manage a landing on the continent, with the American ally, anything was possible.

The submarine bases are finished and the ports hiding them are all declared "fortresses" and fortified as such. The batteries of the Straight of Dover are finished as well. These two types of fortified spaces will constitute, with their particular environment, the strong points of the Atlantic Wall. They will be the "towers" marking off from afar the line of the wall, which is the uninterrupted succession of support stations lined up from beach to beach. The Channel Islands form an advanced bastion, off Cotentin.

The priorities for fortification are:

– Cape Gris-Nez (which will be the principle priority until D-Day)

—Norway

—The ports between Brest and the Gironde (on coasts likely to be used for a landing)

—The coasts between the Seine and the Straight of Dover

—The coast of Normandy and the Bay of the Seine.

The Germans consider that in this last zone it would be difficult to establish a beachhead since controlling a major port appears to them indispensable, and the construction of a prefabricated port, unlikely.

1942

February 8 Fritz Todt dies in a plane crash. This death will remain mysterious: accident or assassination? There was dissension between Todt and the Führer concerning war policy on the two fronts.

Albert Speer succeeds Todt but will be in charge of practically nothing but the war economy, leaving Xavier Dorsch to head the T.O.

February 28 An operation at Bruneval against German radar, the first Allied attack on the continental coast.

March 23 War Directive 40. (see appendix)

This is the official birth of the Atlantic Wall, designed to defend all European territory. The command responsibilities are shared as follows: everything on the sea is to be commanded by the *Kriegsmarine*, and the *Wehrmacht* will intervene only after the enemy landing.

The German navy will regard the European littoral as the flanks of a ship and will install cannon batteries on the promontories to "lead the chase" on all naval objectives. But this arrangement of naval guns requires pivoting iron cupolas, which are too expensive. Putting the arms in concrete casemates will hinder their movement and keep them from following enemy ships; they will not be able to back up the land artillery once the adversary has gained a foothold on the beaches. One can imagine the problems encountered in coordinating the firing plans of both branches of the service. These difficulties appear from the start of the bunker project.

March 28 Operation Chariot against the port in Saint-Nazaire. The dry dock lock is destroyed, at the foot of the submarine base.

May Commencement of the Atlantic Wall.

Xavier Dorsch proffers Hitler bunker projects for secret weapons: flying bombs, rockets, special cannons, etc. At the precise moment when the offensive period ceases and the purely defensive phase of the European fortress begins, the Germans are already at work on the "prospective" period.

August 18 Operation Jubilee, first attempt at landing in Dieppe.

November 3 First defeat of Erwin Rommel's *Afrika Korps*.

November 7 Allied operation against the "ship-raiders" in the Gironde.

November 19 Georgii K. Zhukov's counteroffensive in Stalingrad.

December The beginning of construction of four "cyclops" in the north of France. From these bunkers will be launched the first stratospheric rockets.
—Watten: V2 assembling and firing
—Wizernes: V2 assembling and firing, as well as rocket stages designed to hit New York.
—Prédefin: Pursuit radar controlling the first phase of trajectories
—Siracourt: radiolocation base
These gigantic bunkers, comparable in mass to the units of the submarine bases, are all located on a fifty-kilometer-long north-south axis, behind the Atlantic Wall. In the end, no rocket will be launched from these bases, and the V2's will be launched from mobile platforms.
During this period, electronic warfare is improved; the Germans install the Kammhuber line destined to guide their night fighters against Allied bomber attacks.

1943

January 14–24 Casablanca Conference. Roosevelt demands the unconditional surrender of Germany.
January 31 Defeat at Stalingrad; beginning of the retreat on the eastern front.
February 18 Goebbels discourse at the Sports Palace in Berlin. He announces total war.
May After the defeat of the *Afrika Korps*, the Wehrmacht retreats from the African theater of operations
July–September The Reich loses its Italian ally and must assume the defense of the southern front alone. In France, the Germans hastily build on the Mediterranean coast a wall similar to the *Atlantikwall*; it will be christened the *Südwall*.
August 17 Bombing of Peenemünde; the origin of space arms, this bombing will delay the prospective war Hitler intends to wage from now on.
October 1 Diversion commando in Boulogne-sur-Mer.
November 3 War Directive 51 (see appendix). This directive confirms the preceding plans, restating one last time the strategic priority of the Straight of Dover.

1944

January. Hitler names Field Marshal Rommel inspector of fortifications to supervise the completion of work on the Atlantic Wall. In his first report, the marshal notices that the French littoral is nothing more than a large vacation resort. Named commander in chief of a region extending from

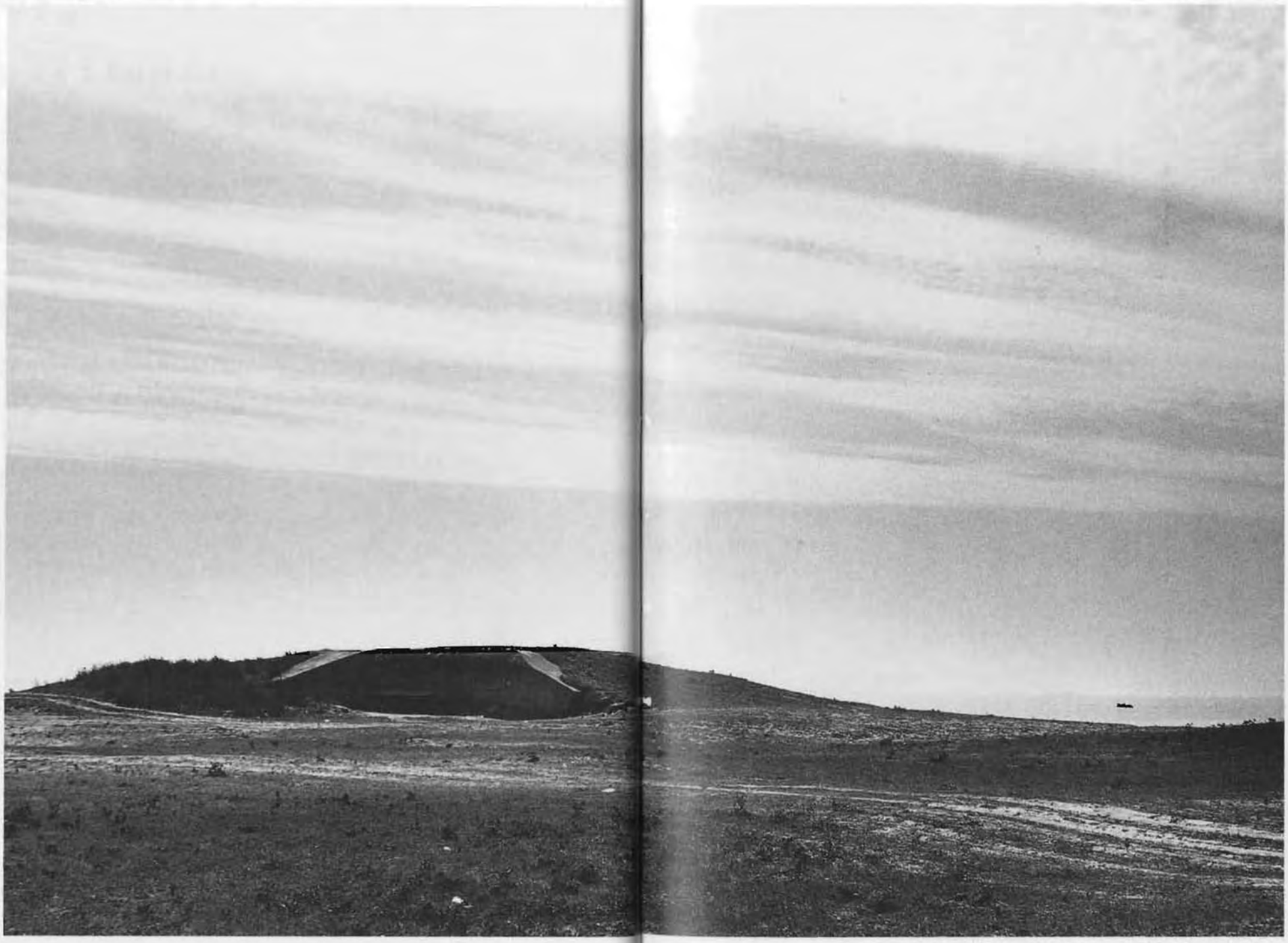
Holland to the Loire, he will try to reconcile, with the help of General Otto Ruge, the actions of the different branches of service located in the west. By ploys of various natures, he hopes to defend the beaches themselves, but does not succeed in convincing the high command of the importance of intervening massively with tanks and aircraft from the start of the Allied invasion; and it is the theory of General Gerd von Rundstedt, recommending that the Allies be allowed a foothold on the beaches before rejecting them into the sea, that wins over.
June 6 Allied landing in Normandy. The air supremacy of the Allies blocks all German troop movement toward the front. The Atlantic Wall proves to be easily broken through at this point in the littoral and the serious difficulties met up with by the Americans at Omaha Beach will be due to the topography of the place, just as the failure to build a second artificial port will be put down to severe weather problems.
June 12–13 Launching of first V1 missiles from a base in the north of Boulogne.
September 8 The first V2 are launched from mobile ramps located in the Hague. The prospective phase of combat in Fortress Europe begins.

WAR

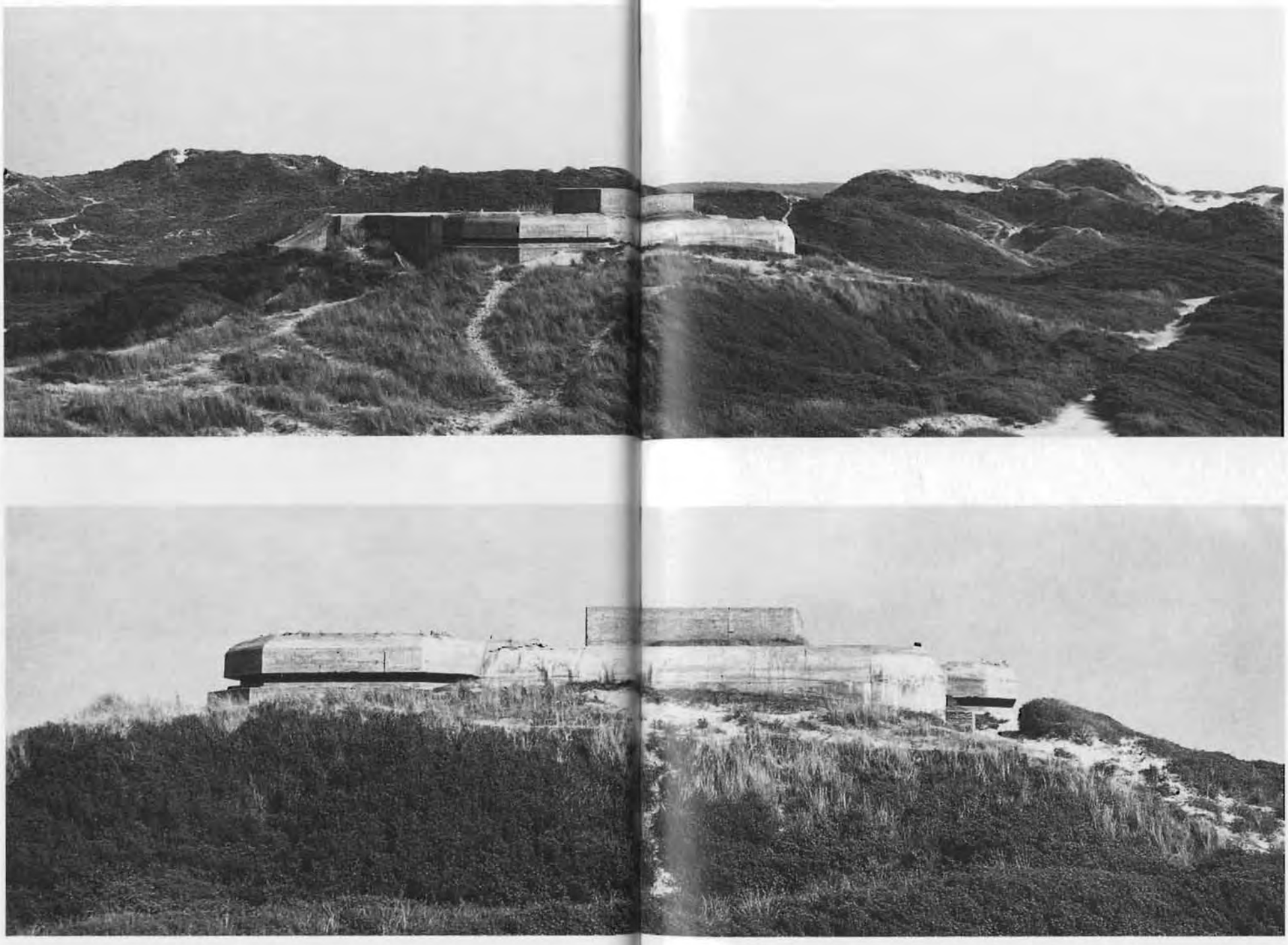
LANDSCAPE

"But where danger is found,
there also rises that which saves."

F. Hölderlin



SHELTER IN A DUNE (SOUTH BRITTANY)



SUPPORT STATION ON THE COAST OF THE ENGLISH CHANNEL

BUNKER FOR LIGHT ARTILLERY

CONTAINERS ON THE ATLANTIC

OBSERVATION STATION IN THE STRAIGHT OF DOVER

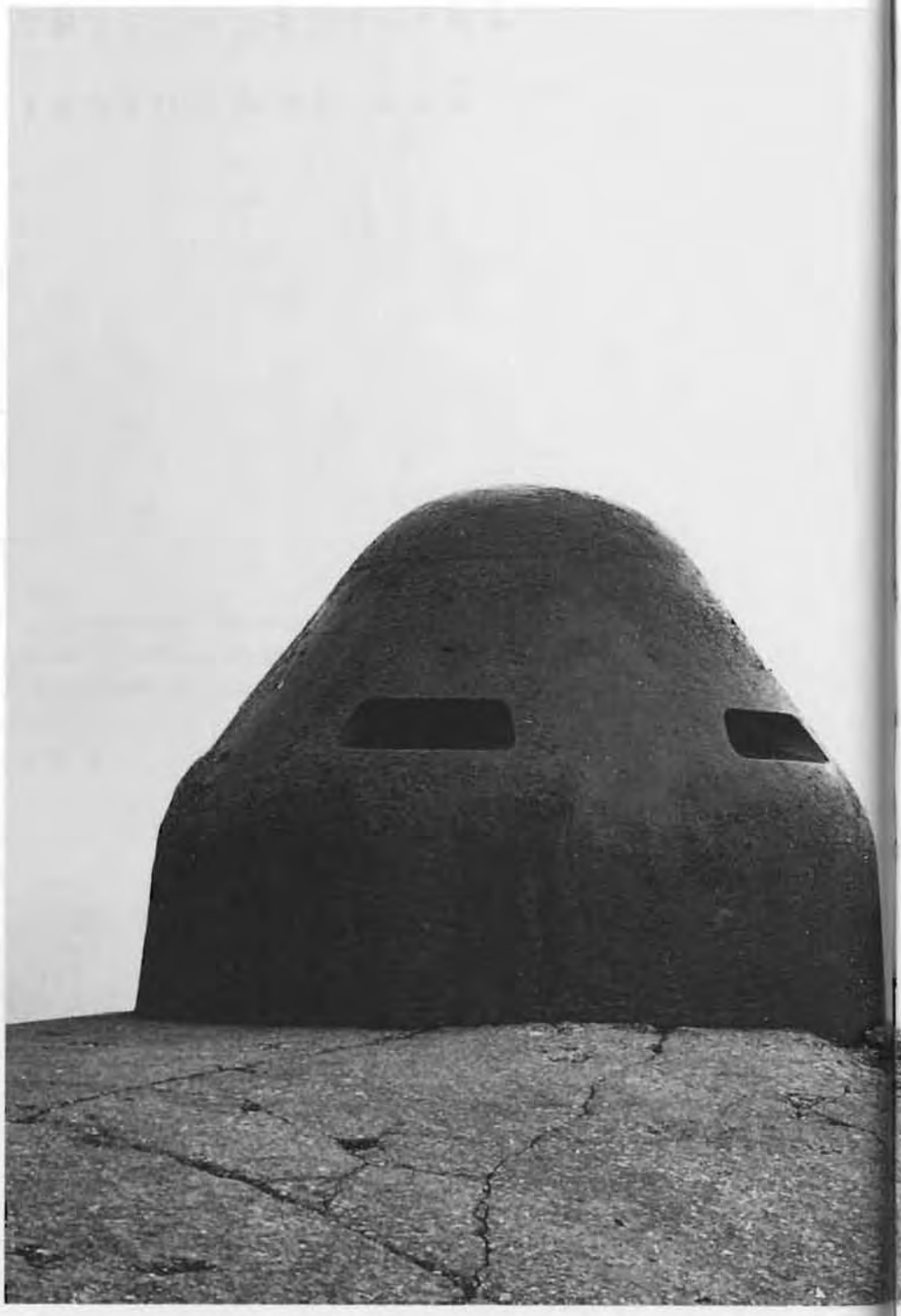
LOOK-OUT STATION ON A BEACH IN NORMANDY

COMMAND POST IN THE BAY OF BISCAY

ANTHROPOMORPHY AND ZOOMORPHY

"Close to death, one no longer sees it,
and you gaze steadily ahead,
perhaps with an animal's gaze."

R. Rilke



IRON CUPOLA ON AN OBSERVATORY

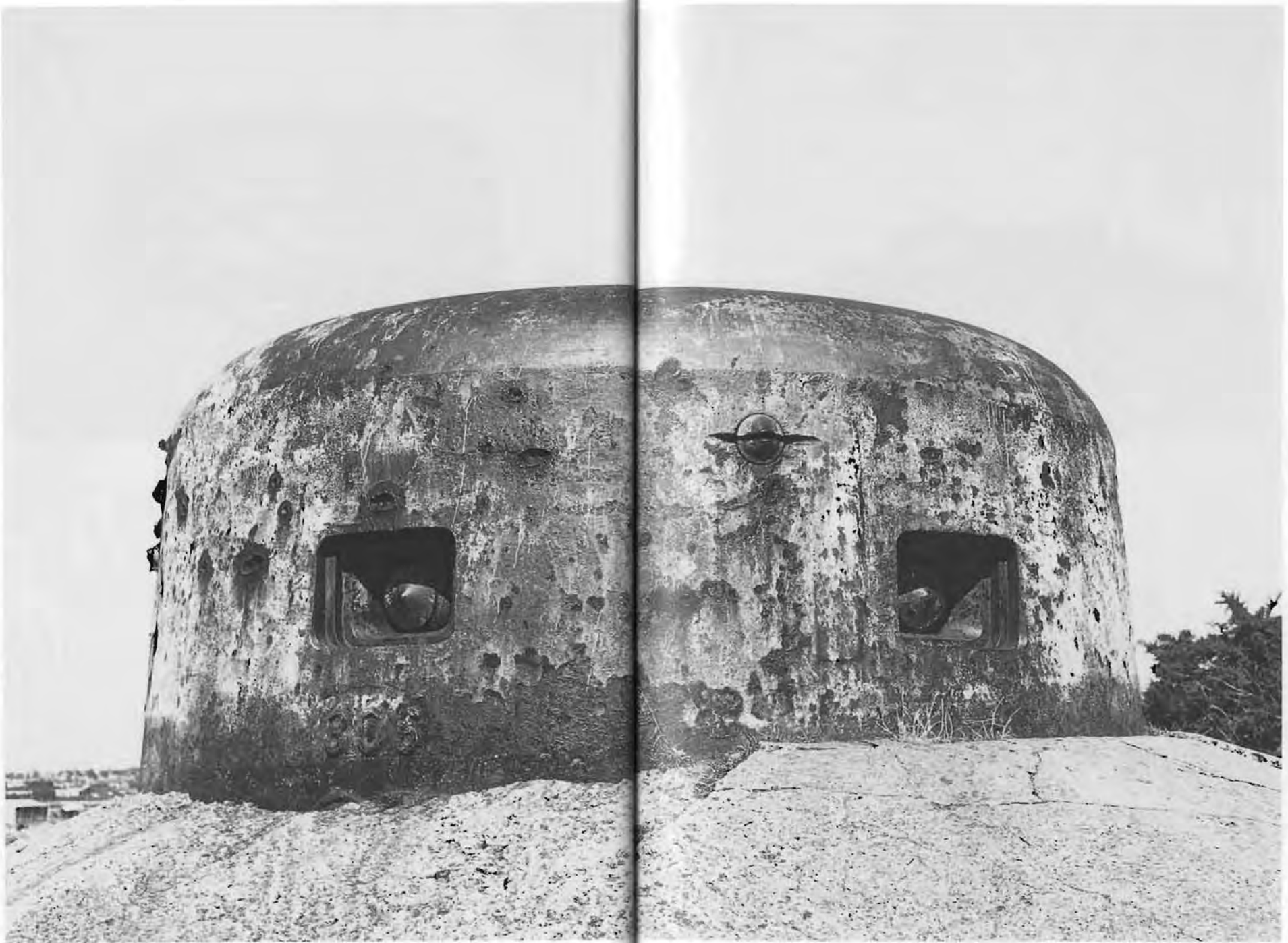
SHELTERS FOR SENTRIES

FIRING SLIT FOR AN ARMORED CUPOLA

OBSERVATION POST ON A CHANNEL ISLAND (DETAIL)

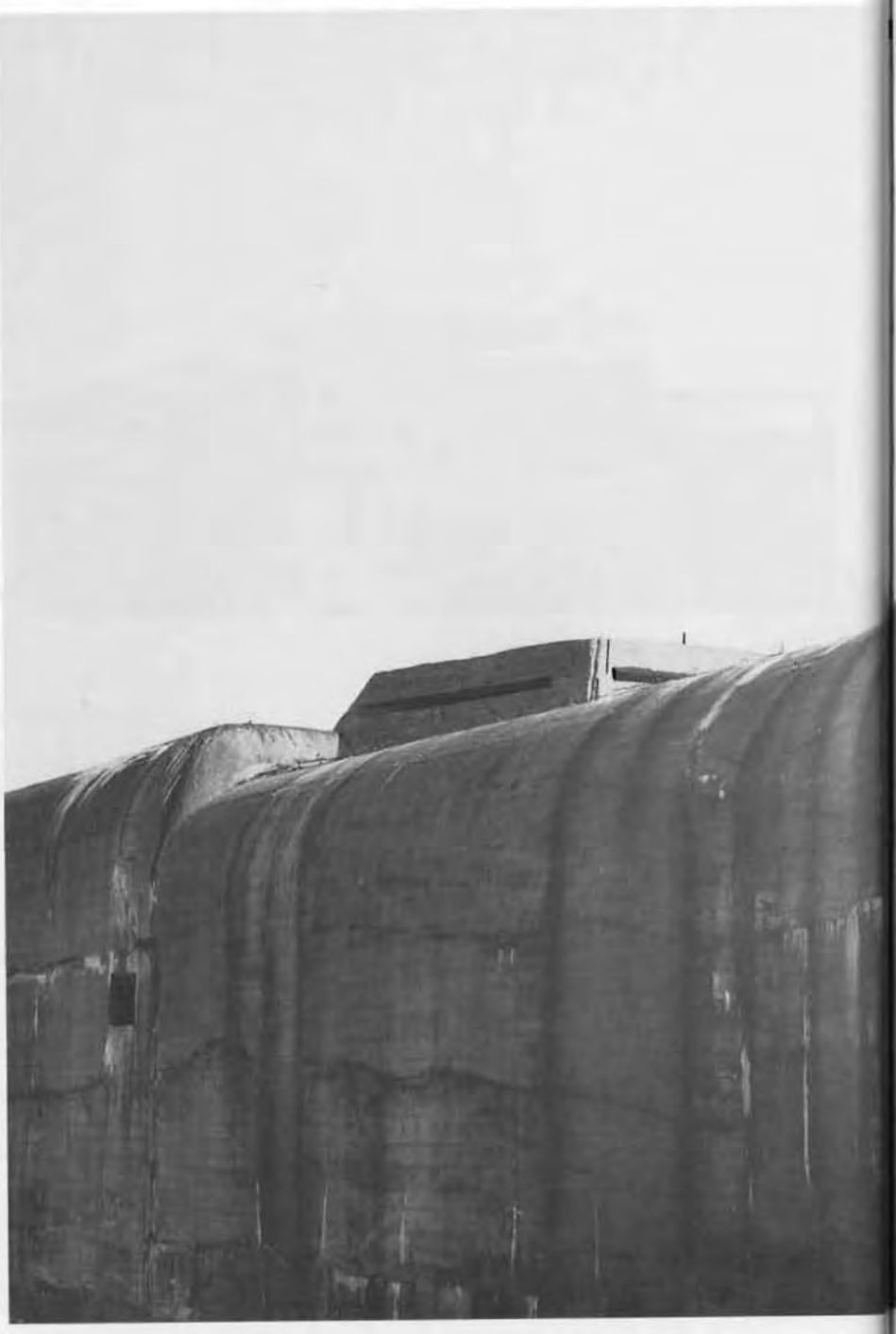
INDIVIDUAL SHELTER ON THE NORTH SEA

LOOK-OUT POST ON THE ATLANTIC

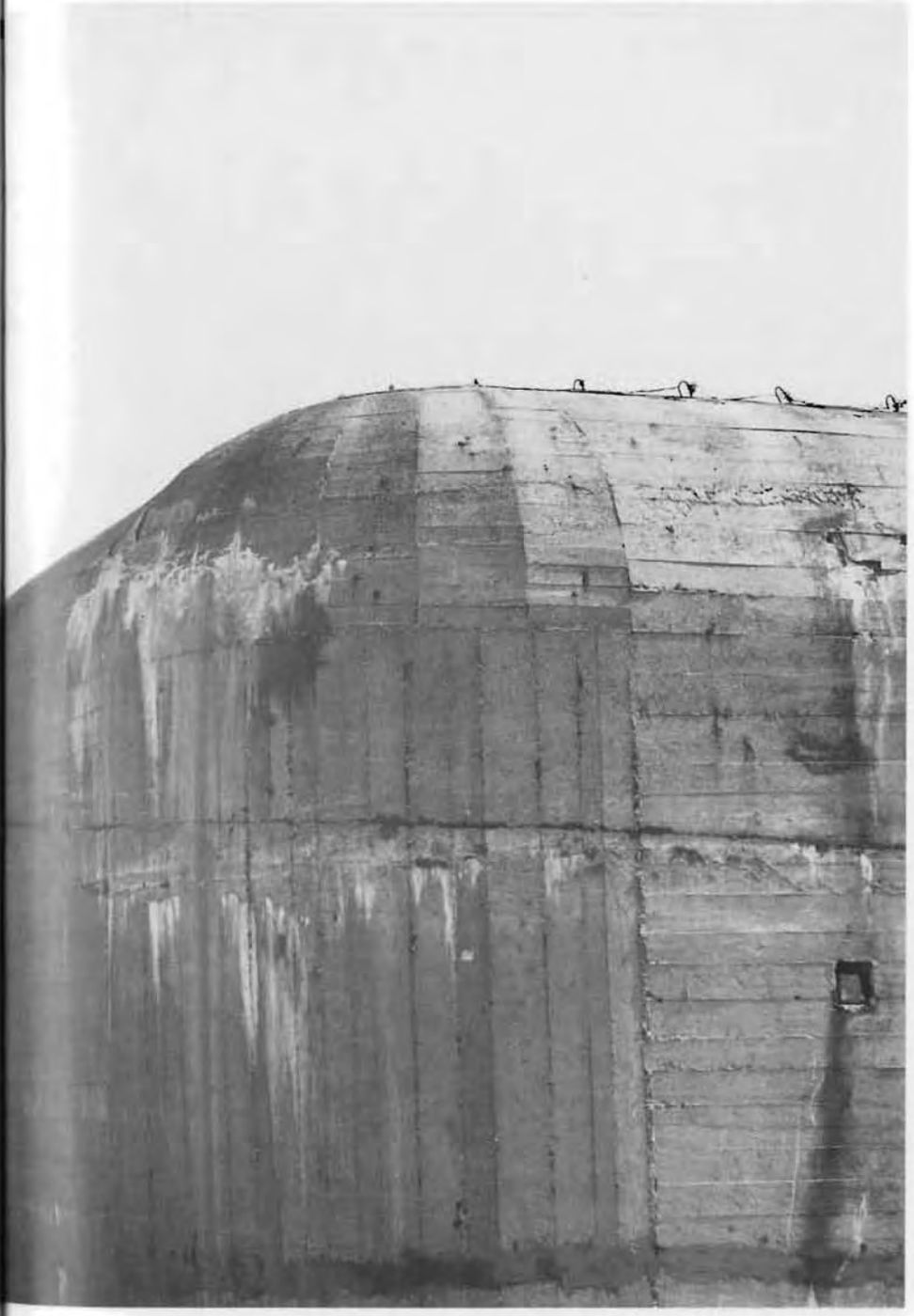


ARMORED CUPOLA FOR LIGHT WEAPONRY

COMMAND POST IN THE LANDES



GIANT BUNKER IN THE STRAIGHT OF DOVER



"BARBARA" FIRING CONTROL TOWER IN THE LANDES

"KAROLA" FIRING CONTROL TOWER ON THE ATLANTIC

"BARBARA" FIRING CONTROL TOWER IN THE LANDES

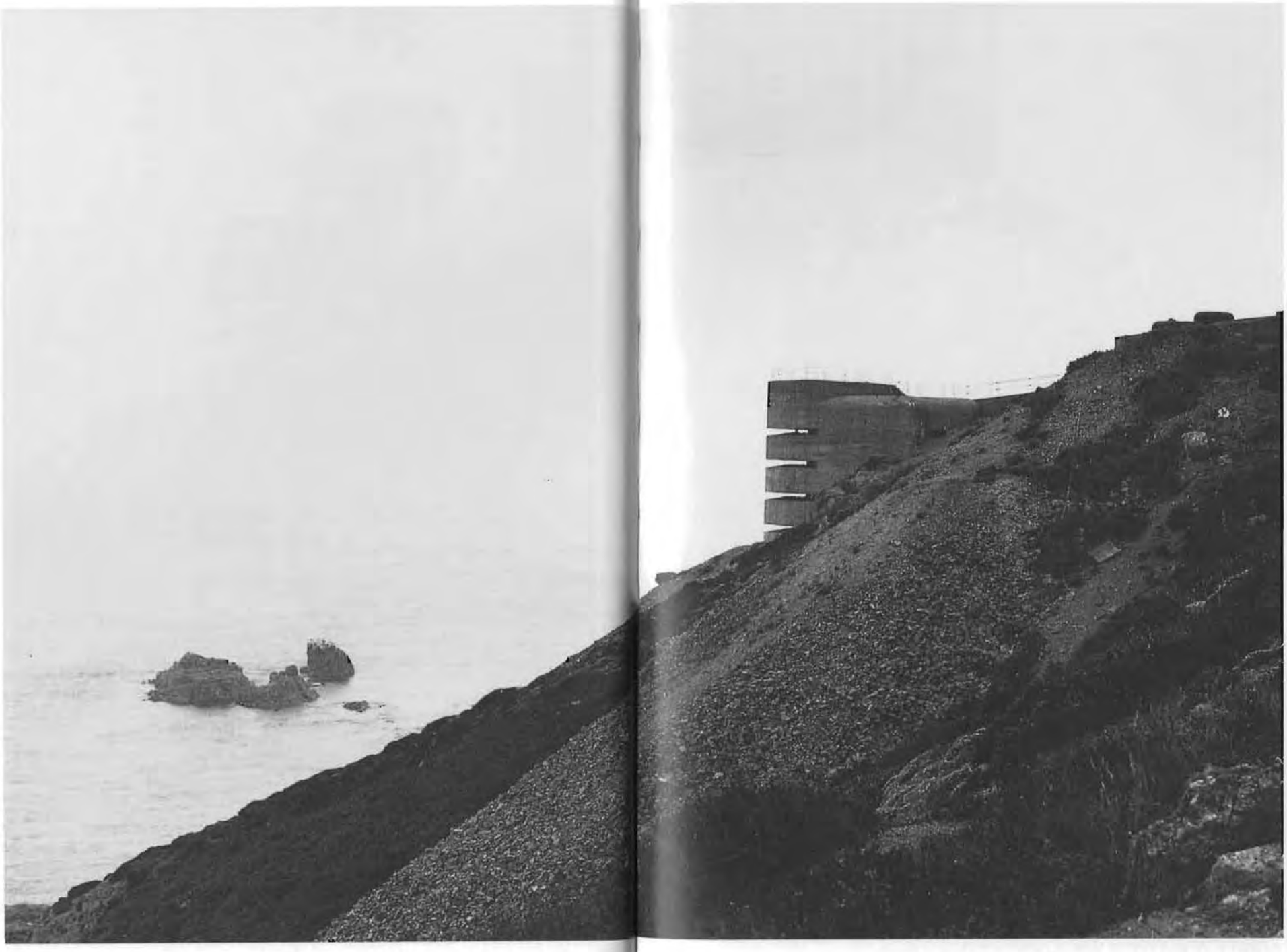
"KAROLA" FIRING CONTROL TOWER ON THE ATLANTIC

"BARBARA"—ONE NOTICES THE BARBED WIRE DESIGNED TO HOLD CAMOUFLAGE

OBSERVATION POST RAISED INTO A PYRAMID

"BARBARA" FIRING DIRECTION TOWER

OBSERVATION POST ON A CHANNEL ISLAND



OBSERVATION POST ON THE ENGLISH CHANNEL

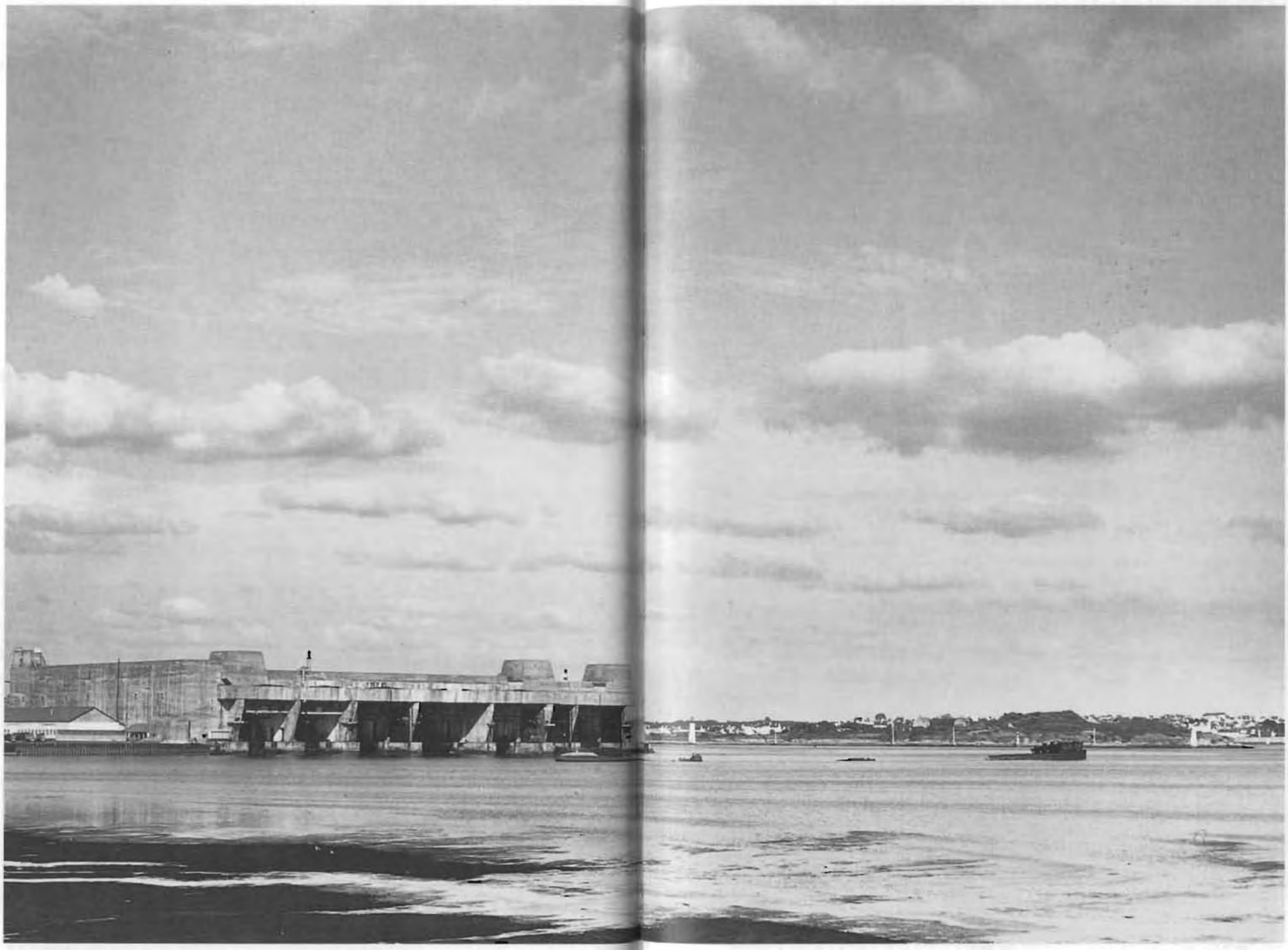
FIRING DIRECTION TOWER IN BRITTANY. THE STEEL BEAMS STICKING OUT OF THIS BUNKER ARE THERE TO PROVOKE PREMATURE EXPLOSION OF PROJECTILES BEFORE THEY HIT THE FORTIFICATION

CARTOUCHE WITH THE NAME OF THE FORTIFICATION

THE MONUMENTS OF PERIL

"Works of art exist
in infinite solitude."

R. Rilke

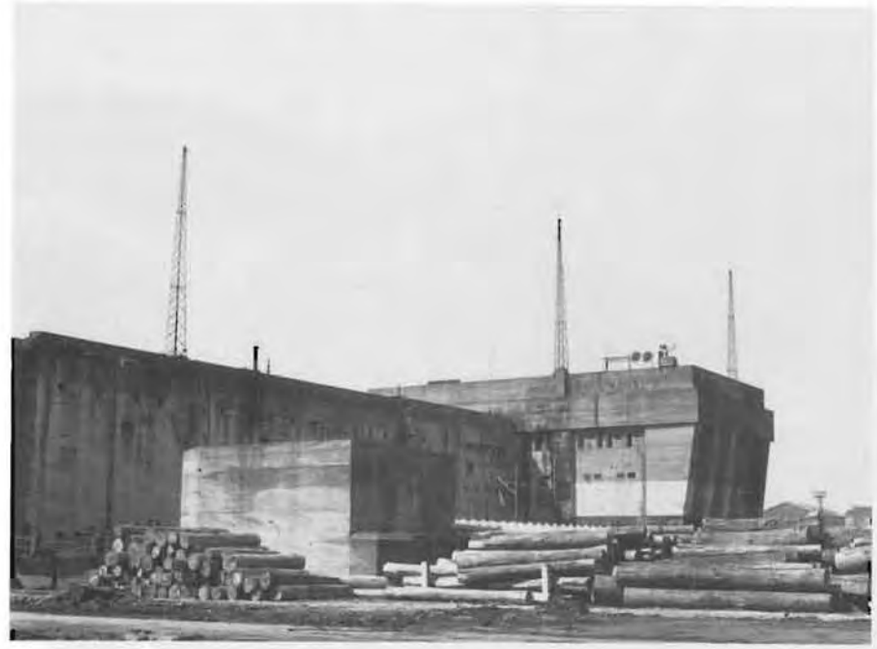


THE SUBMARINE BASE IN LORIENT,
THE LARGEST OF THE ATLANTIC WALL

AERIAL VIEW OF A SUBMARINE BASE IN SAINT-NAZAIRE.
ONE CAN APPRECIATE THE DIMENSIONS OF THE FORTIFICATION IN RESPECT TO THE CITY; IT IS TANTAMOUNT TO ONE OF ITS QUARTERS. (I.G.N. PHOTO)

THE REAR FACADE OF A SUBMARINE BASE IN SAINT-NAZAIRE WITH BUILT-IN DEFENSE TOWER

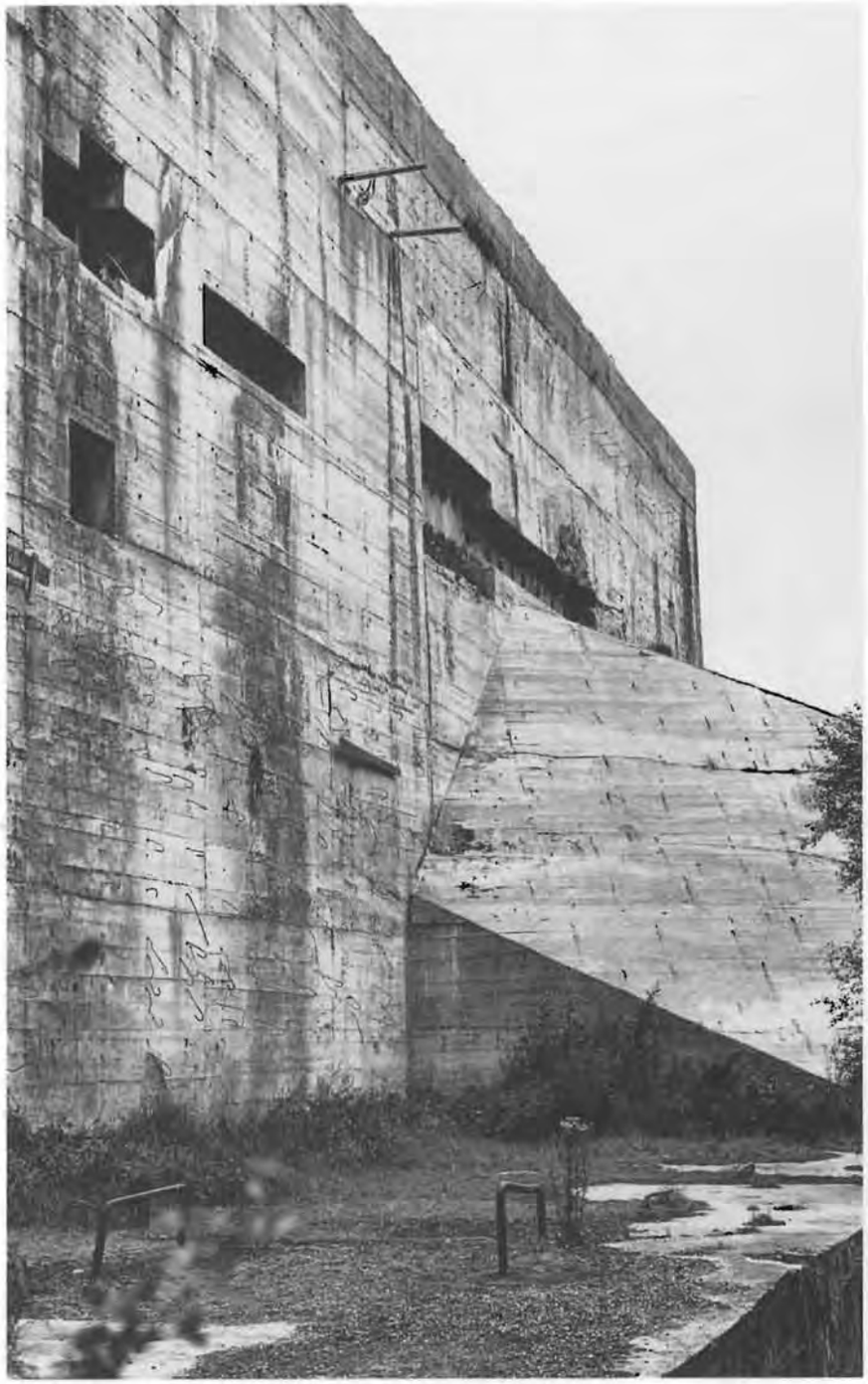
SUBMARINE BASE IN BORDEAUX: FRONT FACADE OF THE DOCK



SUBMARINE BASE OF LA PALISSE:
REAR FACADE FROM TWO DIFFERENT ANGLES

THIS BUILDING EXHIBITED AN EXCEPTIONAL TECHNIQUE OF IMPLEMENTATION:
THE CUPOLA WAS POURED RIGHT ONTO THE GROUND,
ALLOWING THE WORK SITE TO BEGIN IN THE SHELTER OF THE MOUNTAIN
FACADE, WHICH WAS EVENTUALLY DUG OUT FROM THE INSIDE.

LAUNCHING SITE IN THE NORTH OF FRANCE
FOR THE FIRST STRATOSPHERIC ROCKETS

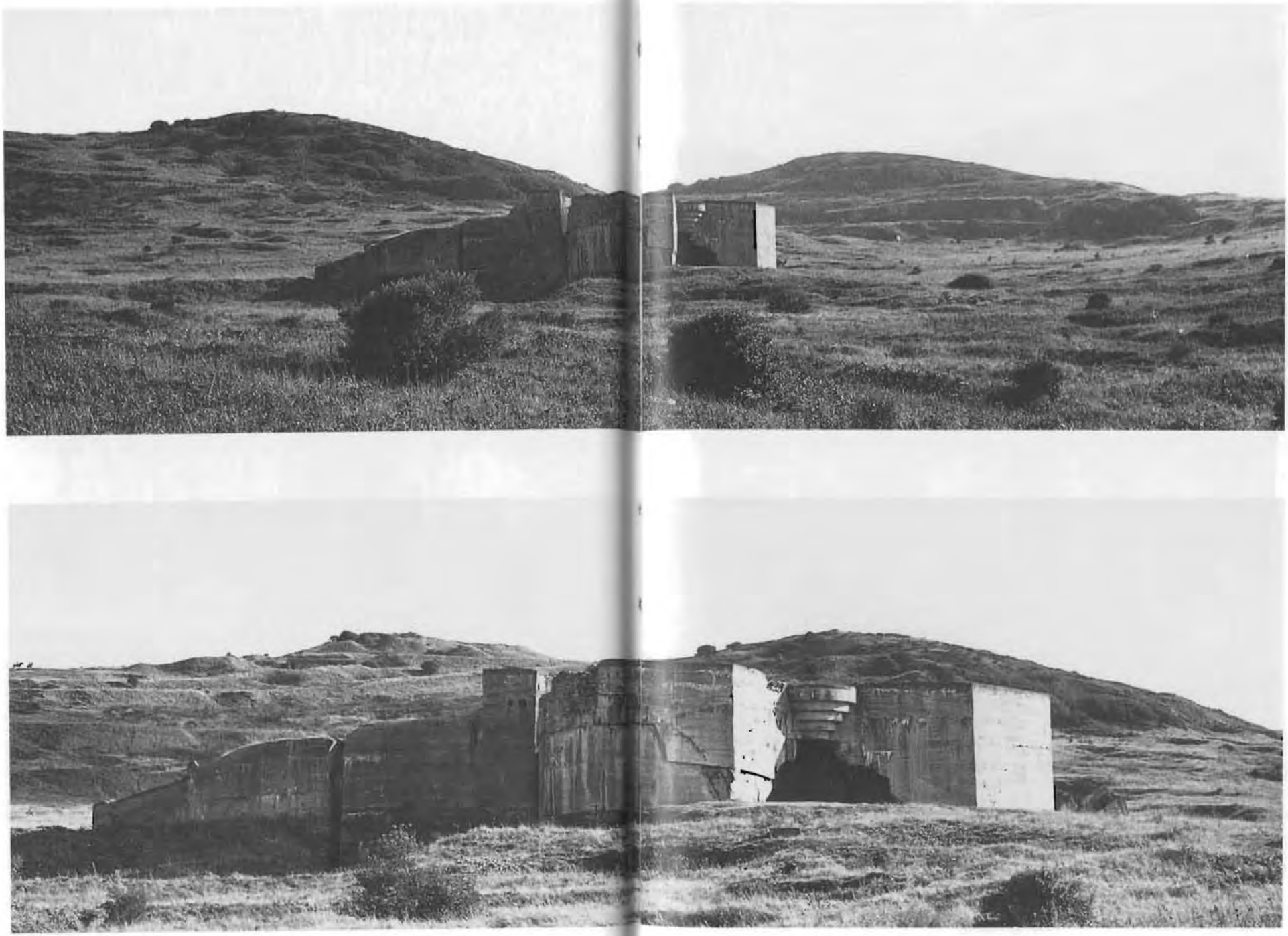


THE WATTEN BUNKER—V2 LAUNCHING SITE.
THE FIRST OF HUGE WORKS
DESIGNED TO HARBOR STRATOSPHERIC ARMS

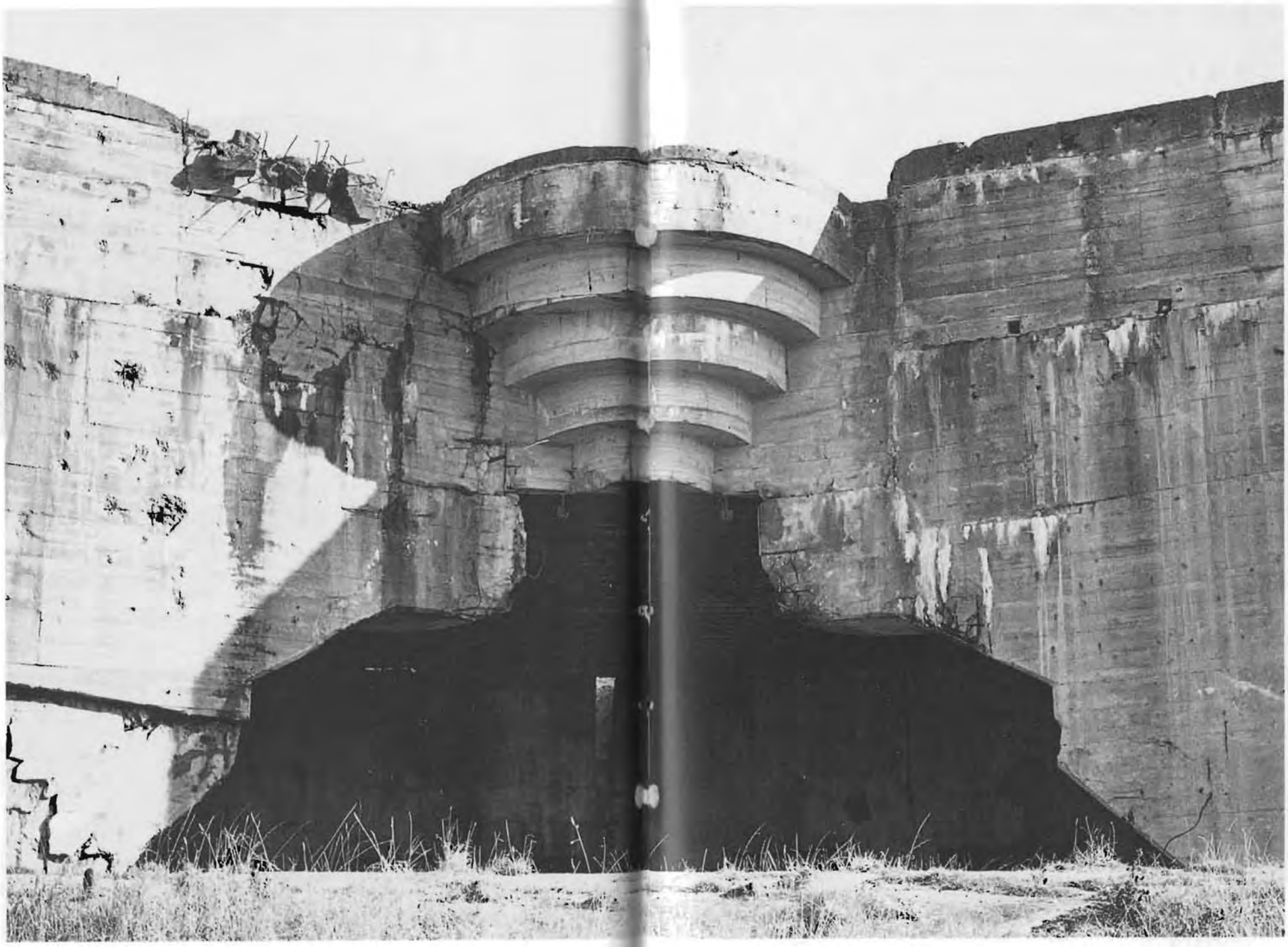
AEROSTATIC BUNKER: THE SHELTER TAKES ON THE FORM OF A PROJECTILE

BOMB SHELTER IN BERLIN SPORTS PALACE
ON 18 FEBRUARY 1943,
DURING A MEETING IN THIS SPORTS ARENA,
GOEBBELS ROUSED UP THE GERMAN NATION:

"DO YOU WANT TOTAL WAR? MORE TOTAL,
MORE RADICAL THAN YOU CAN IMAGINE IT TODAY?"
THE TRAGIC APPROBATION ALLOWED THE GAULEITER TO CONCLUDE,
"SO, PEOPLE, MAY THE STORM BREAK OUT!"



LINDEMANN BATTERY IN THE STRAIGHT OF DOVER



LINDEMANN BATTERY IN THE STRAIGHT OF DOVER

SERIES AND TRANSFORMATIONS

"The beautiful is just
the first degree of the terrible."

R. Rilke

TWO TYPES OF EMBRASURES FOR LIGHT ARTILLERY GUNS.
THE GRADED EMBRASURE FOR AVOIDING THE FUNNELING EFFECT.
ONE ALSO NOTICES THE CONCRETE MATERIAL
DESIGNED TO DISGUISE THE FORTIFICATION.

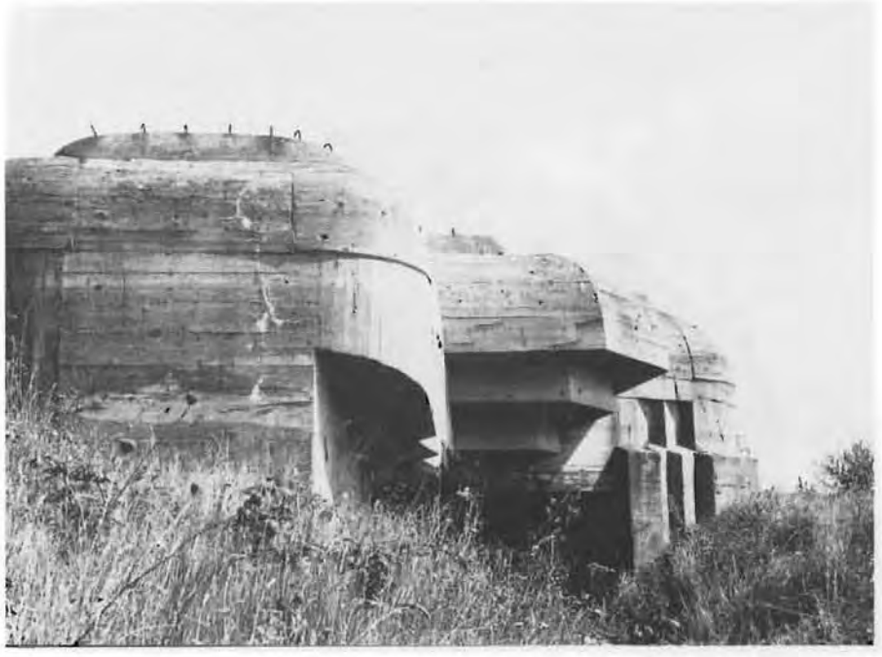
THE SMOOTH EMBRASURE SIGNIFIES THAT THE FORTIFICATION WILL GET
ARMOR PLATING. THE INCLINED MASS, EXISTING IN EACH BUNKER,
SERVES TO SCREEN IT AND TO MARK THE CANNON'S BLIND SPOT.

A SERIES OF EMBRASURES

DIFFERENT SOLUTIONS TO THE PROBLEM
OF AN OPEN FACADE ON AN ARTILLERY BUNKER

TWO TYPES OF FACADES: ABOVE, FOR HEAVY ARTILLERY,
BELOW, FOR LIGHT ARTILLERY

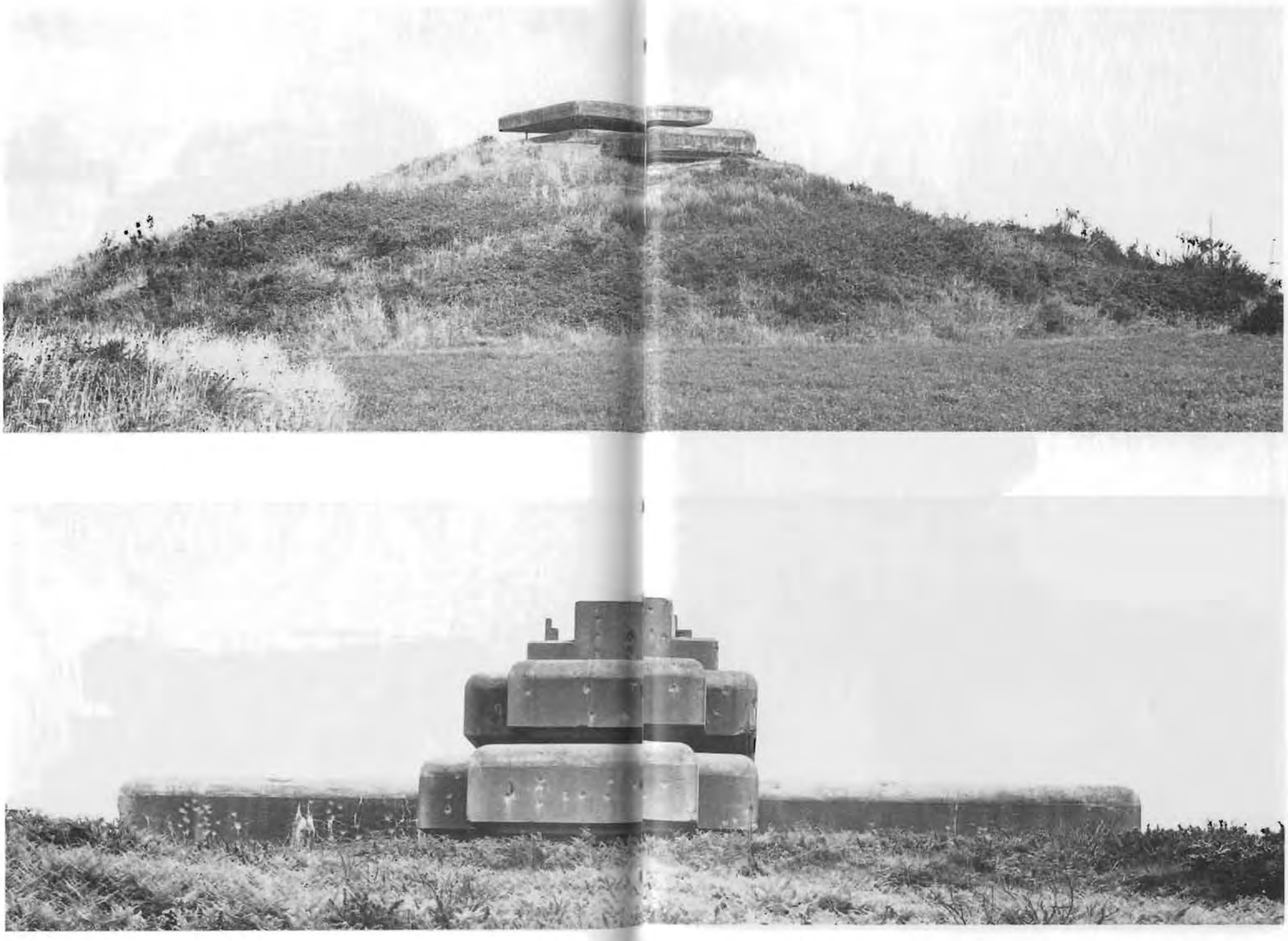
THE "TODT FRONT"—THE OVERHUNG SOLID MASS COMPLEMENTS
THE VERTICAL GRADINGS OF THE EMBRASURE



EXPERIMENTAL MOBILE BUNKER: THE UPPER MASS PIVOTS ON ITS BASE
AND SHOWS ALTERNATELY ITS OPEN FACE DURING FIRING
AND ITS BLIND SIDE FOR PROTECTION AFTER FIRING

COMMAND POST IN THE SOUTH OF BRITTANY

THE REAR SOLID MASS OF A FIRING CONTROL POST



A THREE-STORY COMMAND POST

FIRING CONTROL POST OF THE SEEADLER BATTERY

TWO-STORY FIRING CONTROL POST

TWO TYPES OF FACADES: THE UPPER SLAB
PROTECTS THE TELEMETER, WHICH CONTROLS THE FIRING IN THE BATTERY;
THE LOWER SLAB PROTECTS THE COMMAND

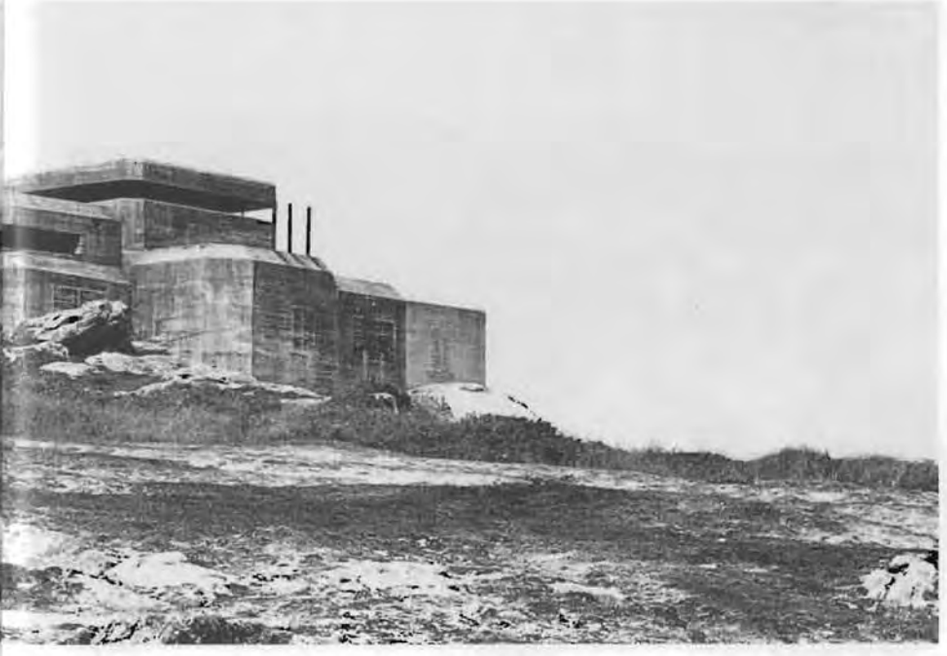
A GLIMPSE OF THE POSITION OF A FIRING CONTROL POST NEAR A BATTERY

COMMAND POST IN THE MOUTH OF THE LOIRE

TWO TYPES OF OBSERVATION POSTS:
WITH CURVED SECTIONS AND WITH FLATTENED ANGLES

BUNKER WITH TWO EMBRASURES: THIS TYPE OF FORTIFICATION IS RARE
ON ACCOUNT OF MULTIPLE CONCEALMENT PROBLEMS

LOOK-OUT POST



ARMOR-PLATED CUPOLA FOR LIGHT WEAPONS ON A CONCRETE SHELTER

COMMAND POST IN SOUTH BRITTANY

SHELTER IN A BARROW IN SOUTH BRITTANY: THE CONTINUANCE OF THIS SITE CONFLATES FUNERARY ARCHITECTURE WITH MILITARY ARCHITECTURE

RAISED CONTAINER ON BOMB SHELTER

SIMPLE CONCRETE TRENCH FOR SIX TO EIGHT SOLDIERS

ARCHITECTURAL DETAILS FOR A BANQUETTE

ENTRANCE TO AN UNDERGROUND SHELTER WITH AUTOMATIC WEAPON NEST

AIR VENT

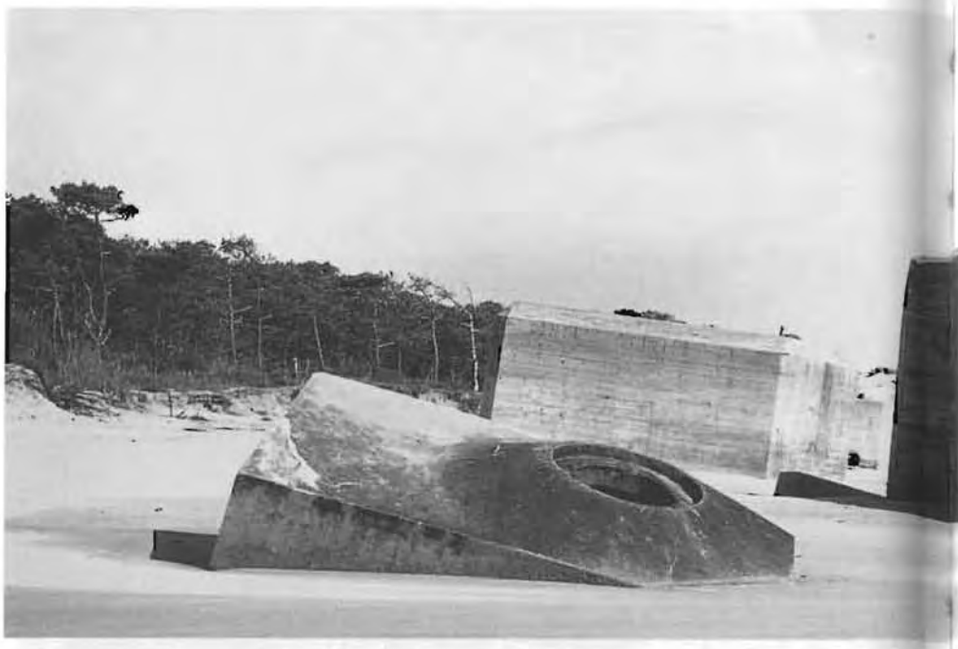
CONCRETE EPAULEMENT

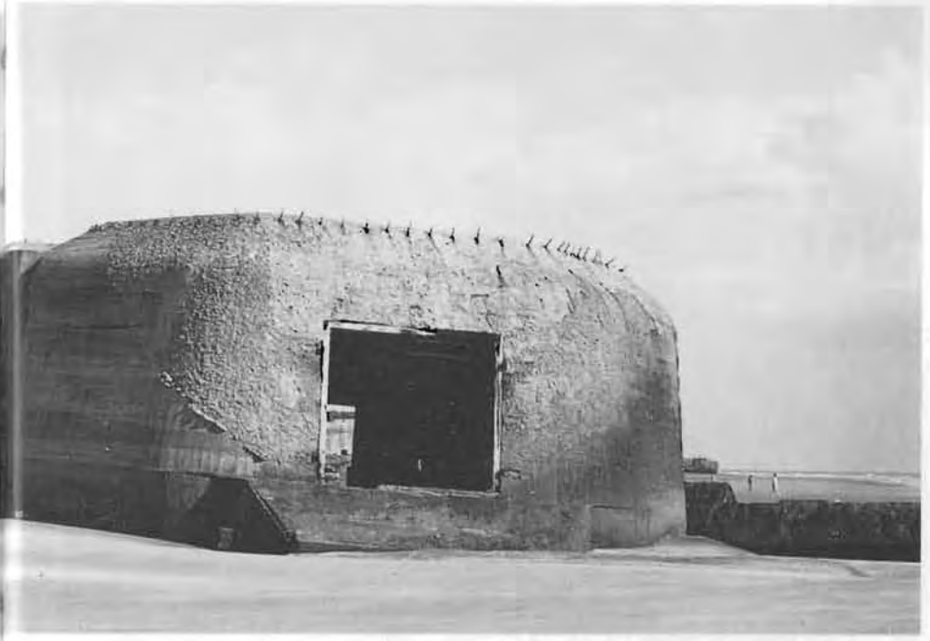
AN AESTHETICS OF DISAPPEARANCE

We are a sign empty of meaning,
indifferent and far from home."

F. Hölderlin

OBSERVATION TOWER CAMOUFLAGED AS CHURCH BELFRY

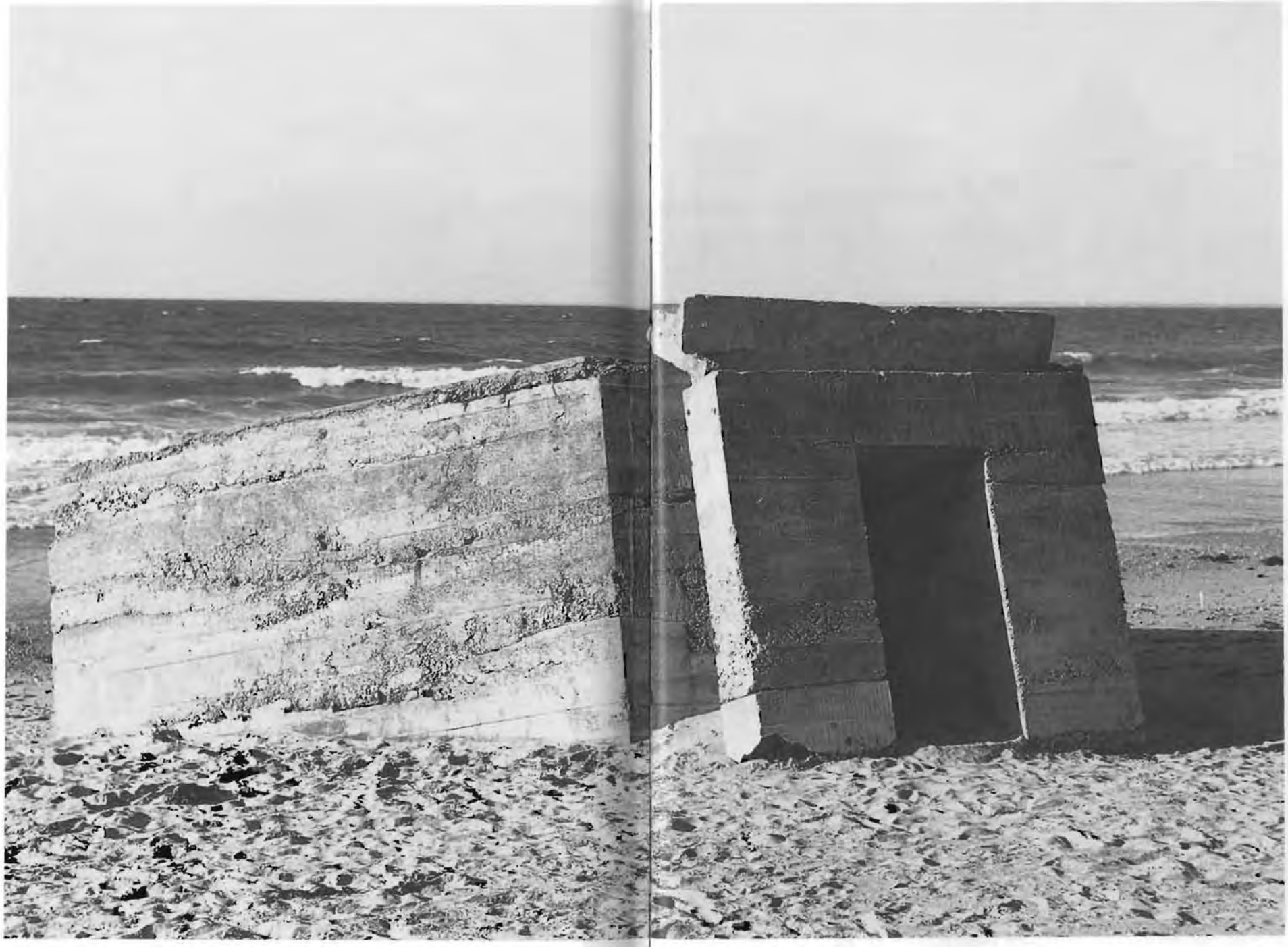




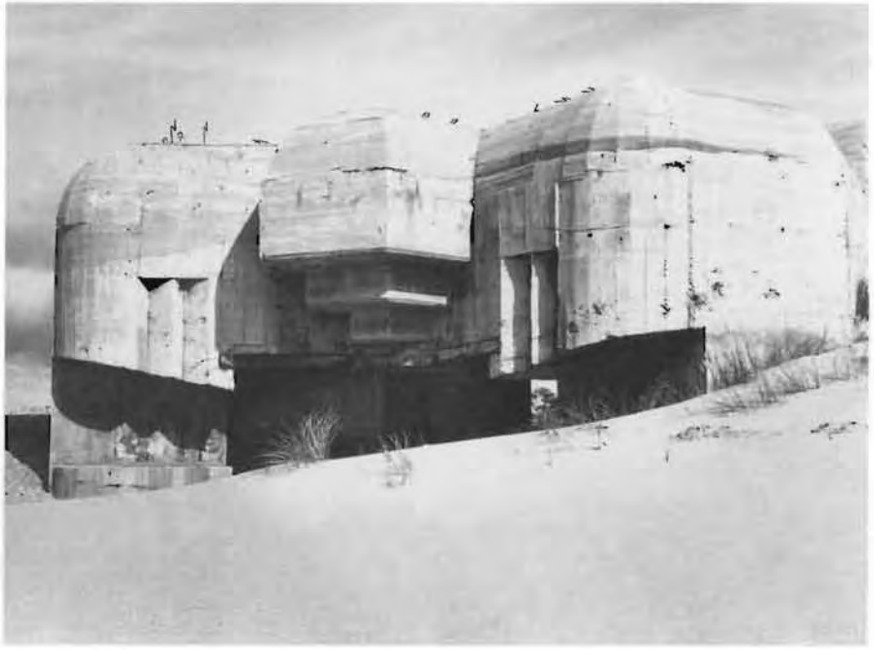
BUNKER UNCOVERED BY THE SEA

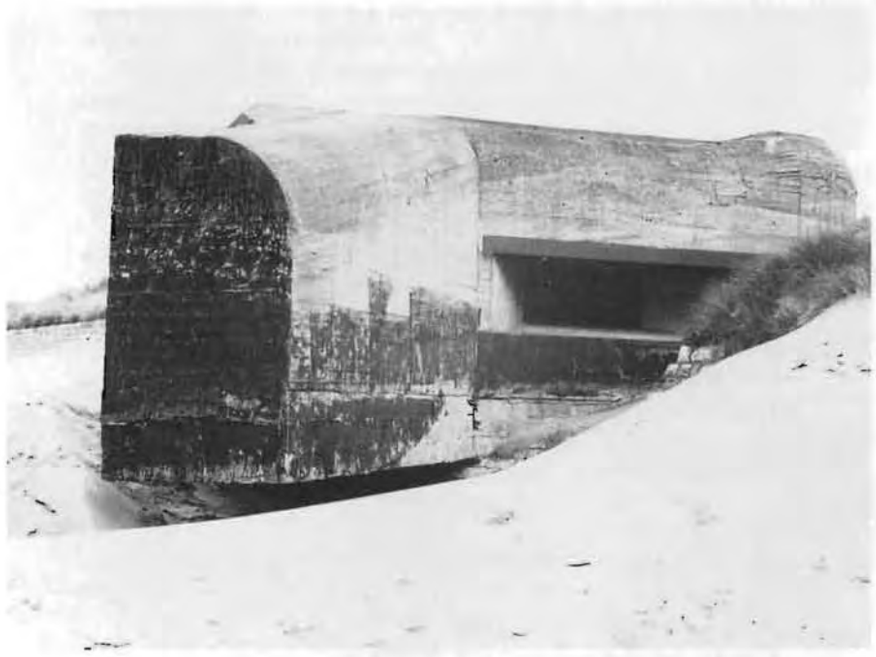
BUNKER SUNK INTO THE SAND

OBSERVATION POSTS REVEALED BY THE EROSION OF THE DUNES



EMPTY FRAMEWORK, ABANDONED, TILTED INTO THE SAND
LIKE THE SKIN OF AN EXTINCT SPECIES





DISAPPEARING

WAR DIRECTIVES*

THE FÜRHER AND SUPREME COMMANDER OF THE ARMED FORCES

Führer Headquarters,
16 July 1940.
7 copies

DIRECTIVE No. 16
On preparations for a landing
operation against England

Since England, in spite of her hopeless military situation, shows no signs of being ready to come to an understanding, I have decided to prepare a landing operation against England, and, if necessary, to carry it out.

The aim of this operation will be to eliminate the English homeland as a base for the prosecution of the war against Germany and, if necessary, to occupy it completely.
I therefore order as follows:

1. The *landing* will be in the form of a surprise crossing on a wide front from about Ramsgate to the area west of the Isle of Wight. Units of the air force will act as artillery, and units of the navy as engineers.

The possible advantages of *limited operations* before the general crossing (e.g., the occupation of the Isle of Wight or of the county of Cornwall) are to be considered from the point of view of each branch of the armed forces and the results reported to me. I reserve the decision to myself. Preparations for the entire operation must be completed by the middle of *August*.

2. These preparations must also create such conditions as will make a landing in England possible, viz.:

(a) The English air force must be so reduced morally and physically that it is unable to deliver any significant attack against the German crossing.

(b) Mine-free channels must be cleared.

* Excerpts from War Directives edited by H.R. Trevor-Roper with – Pan U.K.

(c) The Strait of Dover must be closely sealed off with minefields on both *flanks*; also the western entrance to the English Channel approximately on the line Alderney-Portland.

(d) Strong forces of coastal artillery must command and protect the forward coastal area.

(e) It is desirable that the English navy be tied down shortly before the crossing, both in the North Sea and in the Mediterranean (by the Italians).* For this purpose we must attempt even now to damage English home-based naval forces by air and torpedo attack as far as possible.

3. Command organization and preparations

Under my overriding command and according to my general instructions, the commanders-in-chief will command the branches of the armed forces for which they are responsible.

From 1St August the operations staffs of commander-in-chief army, commander-in-chief navy, and commander-in-chief air force are to be located at a distance of not more than 50 kilometers from my Headquarters (Ziegenberg).

It seems to me useful that the inner operations staffs of commander-in-chief army and commander-in-chief navy should be placed together at Giessen.

Commander-in-chief army will detail one army group to carry out the invasion.

The invasion will bear the cover name '*Seelöwe* [Sea Lion].'

In the preparation and execution of this operation the following tasks are allotted to each service:

(a) *Army*:

The army will draw up the operational and crossing plans for all formations of the first wave of the invasion. The anti-aircraft artillery that is to cross with the first wave will remain subordinate to the army (to individual crossing units) until it is possible to allocate its responsibilities between the support and protection of troops on the ground, the protection of disembarkation points, and the protection of the airfields that are to be occupied.

The army will, moreover, lay down the methods by which the invasion is to be carried out and the individual forces to be employed, and will determine points of embarkation and disembarkation in conjunction with the navy.

(b) *Navy*:

The navy will procure the means for invasion and will take them, in accordance with the wishes of the army, but with due

* Mussolini had declared war on Britain on 10 June.

regard to navigational considerations, to the various embarkation points. Use will be made, as far as possible, of the shipping of defeated enemy countries.

The navy will furnish each embarkation point with the staff necessary to give nautical advice, with escort vessels and guards. In conjunction with air forces assigned for protection, it will defend the crossing of the English Channel on both flanks. Further orders will lay down the chain of command during the crossing. It is also the task of the navy to coordinate the setting up of coastal artillery – i.e., all artillery, both naval and military, intended to engage targets at sea – and generally to direct its fire. The largest possible number of *extra-heavy guns* will be brought into position as soon as possible in order to cover the crossing and to shield the flanks against enemy action at sea. For this purpose railway guns will also be used (reinforced by all available captured weapons) and will be sited on railway turntables. Those batteries intended only to deal with targets on the English mainland (K_5 and K_{12}) will not be included. Apart from this the existing extra-heavy platform-gun batteries are to be enclosed in concrete opposite the Strait of Dover in such a manner that they can withstand the heaviest air attacks and will permanently, in all conditions, command the Strait of Dover within the limits of their range. The technical work will be the responsibility of the Todt Organization.*

(c) *The task of the air force will be:*

To prevent interference by the enemy air force.

To destroy coastal fortresses that might operate against our disembarkation points, to break the first resistance of enemy land forces, and to disperse reserves on their way to the front. In carrying out this task the closest liaison is necessary between individual air force units and the army invasion forces.

Also, to destroy important transport highways by which enemy reserves might be brought up, and to attack approaching enemy naval forces as far as possible from our disembarkation points. I request that suggestions be made to me regarding the employment of parachute and airborne troops. In this connection it should be considered, in conjunction with the army, whether it would be useful at the beginning to hold parachute and airborne troops in readiness as a reserve, to be thrown in quickly in case of need.

4. Preparations to ensure the necessary communications between France and the English mainland will be handled by the

* The Todt Organization, commanded by Fritz Todt, was responsible for national engineering construction.

chief, armed forces signals.

The use of the remaining eighty kilometers of the East Prussia cable is to be examined in cooperation with the navy.

5. I request commanders-in-chief to submit to me as soon as possible –

(a) The plans of the navy and air force to establish the necessary conditions for crossing the English Channel (see paragraph 2).

(b) Details of the building of coastal batteries (navy).

(c) A general survey of the shipping required and the methods by which it is proposed to prepare and procure it. Should civil authorities be involved? (navy).

(d) The organization of air defense in the assembly areas for invasion troops and ships (air force).

(e) The crossing and operation plan of the army, the composition and equipment of the first wave of invasion.

(f) The organization and plans of the navy and air force for the execution of the actual crossing, for its protection, and for the support of the landing.

(g) Proposals for the use of parachute and airborne troops and also for the organization and command of antiaircraft artillery as soon as sufficient English territory has been captured.

(h) Proposal for the location of naval and air headquarters.

(i) Views of the navy and air force whether limited operations are regarded as useful *before* a general landing and, if so, of what kind.

(k) Proposal from army and navy regarding command *during* the crossing.

signed:
Adolf Hitler

THE FÜHRER AND SUPREME COMMANDER OF THE ARMED FORCES

Führer Headquarters,
23 March 1942.
25 copies

DIRECTIVE No. 40
Ref. Competence of commanders in coastal areas.

I. General Considerations:

The coastline of Europe will, in the coming months, be exposed to the danger of an enemy landing in force.

The time and place of the landing operations will not be dictated to the enemy by operational considerations alone. Failure in other theaters of war, obligations to allies, and political considerations may persuade him to take decisions that appear unlikely from a purely military point of view.

Even enemy *landings with limited objectives* can interfere seriously with our own plans if they result in the enemy gaining any kind of foothold on the coast. They can interrupt our coastal sea traffic, and pin down strong forces of our army and air force, which will therefore have to be withdrawn from areas of crucial importance. It would be particularly dangerous should the enemy succeed in capturing our airfields or in establishing his own in areas that he has occupied.

The many important military and industrial establishments on the coast or in its neighborhood, some of them equipped with particularly valuable material, may moreover tempt the enemy *to undertake surprise attacks of a local nature.*

Particular attention must be paid to English *preparations for landings* on the open coast, for which they have at their disposal many armored landing craft, built to carry armored fighting vehicles and heavy weapons. The possibility of *parachute and airborne attacks* on a large scale must also be envisaged.

II. General operational instructions for coastal defense:

1. *Coastal defense is a task for all armed forces,* calling for particularly close and complete cooperation by all units.

2. The intelligence service, as well as the day-to-day reconnaissance by the *navy* and the *air force*, must strive to obtain early information of enemy *readiness and approach preparations* for a landing operation.

All suitable sea and air forces will then concentrate on enemy points of embarkation and convoys, with the aim of destroying the enemy as far from the coast as possible.

It is however possible that the enemy, by skillful camouflage and by taking advantage of unpredictable weather conditions, may achieve a completely surprise attack. *All troops* who may be exposed to such surprise attacks must be in *a state of permanent readiness.*

One of the most important duties of commanding officers will be to overcome the lack of vigilance among the troops which, as experience has shown, increases with the passage of time.

3. *In defending the coast* – and this includes *coastal waters* within range of medium coastal artillery – *responsibility for the planning and implementation of defensive measures* must, as recent battle experience dictates, lie unequivocally and unreservedly in the hands of a single commander.

The commander responsible must make use of all available forces and weapons of the branches of the armed forces, of organizations and units outside the armed forces, and of our civil headquarters in the area, for the destruction of enemy transports and landing forces. He will use them so that the attack collapses *if possible before it can reach the coast, at the latest on the coast itself.*

Enemy forces that have landed must be destroyed or thrown back into the sea by immediate counterattack. All personnel bearing arms – irrespective to which branch of the armed forces or to which non-service organization they may belong – will be employed for this. Moreover, the required working capacity of the naval shore supply establishments must be guaranteed, insofar as they are not involved in the land fighting themselves. The same applies to the readiness for action of the air force ground staff and the antiaircraft defense of airfields.

No headquarters or formation is to initiate withdrawal in such circumstances. All German troops stationed on or near the coast must be armed and trained for battle.

The enemy must be prevented from securing a foothold on all islands that could present a threat to the mainland or coastal shipping.

4. *The distribution of forces and the extension of defensive works* must be so carried out that our strongest defense points are situated in those sectors most likely to be chosen by the enemy for landings (fortified areas).

Other coastal sectors that may be threatened by small-scale surprise attacks will be defended by a series of strong points, supported if possible by the coastal batteries. All military and industrial materials of importance to the war effort will be included within these strong points.

The same principles will apply to offshore islands.

Less threatened sectors will be kept under observation.

5. *The division of the coast into sectors* will be decided by the three services in mutual agreement, or, should the situation demand it, by the responsible commander (referred to here in paragraph III,I), whose decision will be final.

6. *The fortified areas and strong points* must be able, by proper distribution of forces, by completion of all-round defense, and by their supply situation, to hold out for some time even against superior enemy forces.

Fortified areas and strong points will be defended to the last man. They must never be forced to surrender from lack of ammunition, rations, or water.

7. The responsible commander (referred to here in paragraph III,I) will issue orders for keeping the coast under constant observation, and ensure that reconnaissance reports from all services are quickly evaluated, coordinated, and transmitted to the headquarters and civilian authorities concerned.

As soon as there is any evidence that an operation by the enemy is imminent, the commander is authorized to issue the necessary instructions for coordinated and complementary reconnaissance on sea and land.

8. There can be no question of peacetime privileges for any headquarters or formation of the armed forces in coastal areas, or for non-military organizations and units. Their accommodation, security precautions, equipment, immediate readiness for action, and the use they make of the terrain, will be entirely dependent upon the necessity of meeting any enemy attack as swiftly and in as great strength as possible. Where the military situation requires it, the civilian population will be immediately evacuated.

III. Competence of Commanders:

1. The following are responsible for the preparation and execution of coastal defense in the *areas under German command*:

(a) In the Eastern area of operations (excluding Finland): army commanders appointed by high command of the army.

(b) In the coastal area of army high command Lapland: commander-in-chief army high command Lapland.

(c) In Norway:
commander armed forces Norway.

(d) In Denmark:
commander of German troops in Denmark.

(e) In the occupied western territories (including the Netherlands):
commander-in-chief west.

For coastal defense the responsible commanders in (d) and (e) will be directly subordinate to the high command of the armed forces.

(f) In the Balkans (including the occupied islands):
commander armed forces southeast.

(g) In the Baltic territories and the Ukraine:
commander armed forces Baltic territories and Ukraine.

(h) In the home theater of war: the commanding admirals.

2. The commanders named in paragraph III, I will have for these tasks *full powers of command* over the staffs commanding all armed forces, the German civil authorities, and the non-military units and organizations in their area.

In exercising their authority they will issue the necessary tactical, administrative, and supply instructions, and will ensure that they are complied with. In all matters relating to land fighting, training of units will follow their ruling, and all necessary information will be put at their disposal.

3. Among the orders to be given and measures to be taken, the following must be given first place.

(a) The inclusion within fortified areas or strong points of all important military and industrial establishments connected with defense, particularly those of the navy (submarine bases) and the air force.

(b) The coordination of coastal reconnaissance.

(c) The defense of fortified areas and strong points by infantry.

(d) The defense by infantry of all isolated positions outside

the fortified areas and strong points – e.g., coastal look-out points and air-attack warning posts.

(e) Artillery defense against land targets. (The navy has priority in the installation of new batteries, or the conversion of existing batteries.)

(f) The defensive readiness, development, and supply facilities of installations, as well as of isolated positions away from these installations. (This includes being equipped with all weapons needed for defense: mines, hand grenades, flame-throwers, barbed wire, etc.)

(g) The signals network.

(h) Methods for ensuring that troops are always on the alert, and that infantry and gunnery training is being carried out in accordance with the special defense requirements.

4. *The same authority is conferred upon local commanders up to sector commanders,* insofar as they are responsible for the defense of a part of the coast.

The commanders designated in paragraph III, 1 will, in general, appoint commanders of *army divisions* employed in coastal defense as local commanders with full powers. In Crete the "Fortress Commandant Crete" will appoint them.

As far as their other duties allow, local commandants or commanders of the air force and navy will be made responsible for the general defense of individual sectors or sub-sectors, particularly air and naval strong points.

5. *All naval and air units employed in strategic warfare* are subordinate to the navy or air force. In the event of enemy attacks on the coast, however, they are required to comply, insofar as tactical considerations allow, with the orders of the commanders responsible for defense. They must therefore be included in the distribution of such information as they require for their duties, and close liaison will be maintained with their headquarters.

IV. Special duties of the branches of the armed forces in the field of coastal defense:

1. *Navy:*

(a) Organization and protection of coastal traffic.

(b) Training and employment of all coastal artillery against targets at sea.

(c) Employment of naval forces.

2. *Air Force:*

(a) Air defense of coastal areas. The use against enemy landings of suitable and available antiaircraft guns, under the orders of the commander responsible for local defense, will not be affected.

(b) The completion of ground organizations and their protection against air attack and surprise attack by land; the latter in cases where airfields are not included in the coastal defenses and are therefore insufficiently protected.

(c) Operational employment of air forces. Attention will be paid to the duplication of command implied by these special duties.

V. Orders and instructions that run contrary to this directive are cancelled from 1 April 1942.

New operation orders, that will be issued by commanders on the basis of my directive, are to be submitted to me through the high command of the armed forces.

signed:
Adolf Hitler

THE FÜRHER

Führer Headquarters,
3 November 1943.
27 copies

DIRECTIVE No. 51

The hard and costly struggle against Bolshevism during the last two and a half years, which has involved the bulk of our military strength in the east, has demanded extreme exertions. The greatness of the danger and the general situation demanded it. But the situation has since changed. The danger in the east remains, but a greater danger now appears in the west: an Anglo-Saxon landing! In the east, the vast extent of the territory makes it possible for us to lose ground, even on a large scale, without a fatal blow being dealt to the nervous system of Germany.

It is very different in the west! Should the enemy succeed in breaching our defenses on a wide front here, the immediate consequences would be unpredictable. Everything indicates that the enemy will launch an offensive against the western front of Europe, at the latest in the spring, perhaps even earlier.

I can therefore no longer take responsibility for further weakening the west, in favor of other theaters of war. I have therefore decided to reinforce its defenses, particularly those places from which the long-range bombardment of England will begin. For it is here that the enemy must and will attack, and it is here – unless all indications are misleading – that the decisive battle against the landing forces will be fought.

Holding and diversionary attacks are to be expected on other fronts. A large-scale attack on Denmark is also not out of the question. From a naval point of view such an attack would be more difficult to deliver, nor could it be as effectively supported by air, but if successful, its political and operational repercussions would be very great.

At the beginning of the battle the whole offensive strength of the enemy is bound to be thrown against our forces holding the coastline. Only by intensive construction, which means straining our available manpower and materials at home and in the occupied territories to the limit, can we strengthen our coastal defenses in the short time that probably remains.